JOURNAL

OF THE

United States Cavalry ASSOCIATION.

PUBLISHED BI-MONTHLY
BY THE UNITED STATES CAVALRY ASSOCIATION,
FORT LEAVENWORTH, KANSAS.

\$2.50 per Annum. 50 Cents a Copy.

Foreign Postage, 50c per year.

LIEUTENANT COLONEL EZRA B. FULLER, U. S. ARMY, RETIRED, EDITOR.

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ORGANIZED NOVEMBER 9, 1885.

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All communications should be addressed to the

SECRETARY U. S. CAVALRY ASSOCIATION,

Fort Leavenworth, Kansas.

JOURNAL

OF THE

United States Cavalry Association.

Vol. XXI.

JULY, 1910.

No. 79.

THE BATTLE OF KELLY'S FORD.

BY MAJOR JOHN BIGELOW, JR, U. S. ARMY RETIRED.

A BOUT the 14th of March, Hooker gave Averell an order to take 3,000 cavalry and six pieces of artillery, and with that force to attack and rout or destroy "the cavalry forces of the enemy reported to be in the vicinity of Culpeper Court House."*

The 17th of March, 1863, was a red-letter day for the cavalry of the Army of the Potomac; for on this day was fought at Kelley's Ford the first purely cavalry fight east of the Mississippi River in which more than one battalion was engaged on each side. In preparation for the event, Averell, the Federal commander, had instructed his men to have their sabers sharpened, and to use them. He promised them a victory.† Pursuant to Hooker's order, he left the main body of the army about 8 a. m. on the 16th of March with portions of the 1st and 2d brigades of his division and of the reserve brigade, ag-

^{*}The text of the order cannot be found. The gist of it is given as above in Averell's report of March 20 (W. R., 39, p. 47) and in Hooker's letter of May 13, transmitting it to Kelton (ib., p. 1073).

[†] Captain D. M. Gilmore, 3d Cavalry, in Glimpses of the Nation's Struggle, 2d Series, pp. 38-44.

Note: Besides the maps accompanying the text of this article, the reader should have a general map of the country between Culpeper Court House and the Potomac.

gregating about 3000 men, and provided with four days' rations and one day's forage. About dark he arrived at Morrisville, 16 miles from camp. Here he bivouacked for the night, and, about 11 p. m., was joined by Martin's 6-gun battery of horse artillery, commanded by Lieutenant Browne, from the artillery camp near Aguia Creek.

His orders were accompanied by reports of operations of the Confederate cavalry in the vicinity of Brentsville, in which the number of the enemy was represented as from 250 to 1000 men. As a precaution he requested that a regiment of cavalry be sent to Catlett's Station, which he regarded as the keypoint to the "middle" fords of the Rappahannock, to throw out pickets in the direction of Warrenton, Greenwich, and Brentsville: but as this request was not granted, he detailed the 1st Mass, and the greater part of the 4th Pa., together about 900 men, to guard the fords and observe the enemy on the north side of the Rappahannock. It is hard to justify this weakening of his active force. He had no train or depot between himself and the Army of the Potomac. There was nothing to be guarded in his rear except his line of retreat, and that he should have been able to open, if any force which the enemy could spare from his front had presumed to close it. He may have apprehended a movement in some force against his rear from the direction of the Shenandoah Valley. In that case he should, it seems, have contented himself with communicating his apprehensions to Hooker, leaving it to him to provide such protection as might be necessary.

Captain Hart of the 4th N. Y., with 100 picked men taken partly from that regiment and partly from the 5th U. S. Regulars, was ordered to proceed to Kelley's Ford as an advance-guard, and at the first glimpse of dawn on the 17th to dash across the river and capture the pickets on the south bank. His command was to be supported by the remainder of the 4th N. Y. In the course of the evening this regiment and the detachment of the 5th U. S. took position near the river. The advance was thus formed almost wholly of the 4th N. Y. (first New York German regiment). The reader may ask why Averell selected for so dangerous, difficult, and important a service, a command which bore, to say the least, an unenviable

reputation as to fighting, and which disgraced itself in the action at Hartwood Church only about three weeks before.

About 11 a. m. on the 16th, Fitzhugh Lee, at Culpeper Court-House, received a telegram from R. E. Lee informing him that "a large body of cavalry had left the Federal army, and was marching up the Rappahannock."* By 6 p. m. his scouts had located this force at Morrisville, and reported the fact to him, but they left him in doubt as to whether the Federals would cross Kelley's Ford or at Rappahannock Ford, or pursue their march toward Warrenton. He reinforced his picket of 20 sharpshooters at Kelley's Ford with 40 more, and ordered the remainder of his sharpshooters to be stationed at daylight where the road to the ford leave the railroad and held ready to move to either crossing. About 4 a. m. on the 17th Averell started from Morrisville with the following command:

	MEN
1st brigade, Second Division (4th N. Y., 6th O., 1st R.	
I.), Colonel Duffié	775
2d brigade, Second Division (3d Pa., two squadrons of	
the 4th Pa., 16th Pa.), Colonel McIntosh	565
Reserve brigade (1st U. S. and three squadrons of 5th	
U. S.†), Captain Reno‡	760
6th N. Y. Battery, First Division, Lieutenant Browne (six	
pieces	100
Total	200

The force left behind—1st Mass. and four squadrons of the 4th Pa.—took post along the railroad between Bealeton and Catlett's Stations, with a reserve at Morrisville, and pickets at the fords and beyond the railroad.

The Confederate force available to oppose Averell's consisted of Fitzhugh Lee's brigade of cavalry and Breathed's battery of horse artillery (four pieces): The brigade comprised at this time the 1st, 2d, 3d, 4th, and 5th regiments of Virginia Cavalry. There were thus five regiments to oppose to Averell's 6 5-6 regiments; and four pieces to oppose to his six. The Confederate regiments, however, were not as strong

^{*}Fitzhugh Lee's report, W. R., 39, p. 61.

[†]Companies C, E, G, H, I, K.

[‡]Who commanded a battalion of the 7th U. S. Cavalry at the Custer massacre, 1876.

as the Federal. The author hesitates to state the numerical strength of the Confederates, there being a wide disagreement among authorities who have expressed themselves regarding it. Fitzhugh Lee does not give it in his official report, but in his Chancellorsville Address he says that he had less than 800 men in the saddle, and "less than 800" is the expression used by Stuart in his report to R. E. Lee for the number of men in action.* The Comte de Paris says that Fitzhugh Lee could not put more than 1000 sabers in line. Major D. A. Grimsley, 6th Va. Cavalry, says, "Lee's brigade numbered perhaps 1200 in all," but he refers to it as occupying Culpeper Court-House and encamped in the vicinity of Brandy Station and Stevensburg, and does not state how much of it was assembled for this engagement.§ Major Frank W. Hess, 3d Artillery, who was a captain in the 3d Pa. Cavalry, calculates Fitzhugh Lee's force as about 1500 sabers. Rev. Frederic Denison, the historian of the 1st R. I. Cavalry, says that Lee's five regiments and horse artillery must have given him about 3000 effective men. I D. M. Gilmore, late captain of the 3d Pa. Cavalry and a participant in the action, says: "The forces were nearly equal, about 3500 men and a battery on each side."** The correct number will probably be found between that of the Comte de Paris and that of Major Grimsley. Let us assume that, including the artillery (which did not arrive until the action was about half over) and the men at the ford, Fitzhugh Lee's force aggregated 1100, or half as many as Averell's.

Averell selected Kelley's Ford as the place of crossing because the country beyord it was better known to him than that beyond any other crossing, and it afforded the shortest route to the enemy's camp. When his column arrived near the ford, the cracking of carbines told that the passage of the river by the advance under Hart had not been effected. The head

^{*}W. R., 39, p. 59.

[†]History of the Civil War in America, V, 25, 26.

Battles in Culpeper County, Virginia, by D. A. Grimsley, p. 7.

The First Battle of Kelley's Ford, Main Bugle, 1893.

^{\$}Sabres and Spurs, by F. Denison, p. 213.

^{**}Glimpses of the Nation's Struggle, 2d Series. p 42.

of the main column reached the ford about 6 a. m.* The river at this point was about 100 yards wide, four feet deep, and running swiftly. The approach on both banks was obstructed by abatis. The southern bank was manned by the detachment of Fitzhugh Lee's sharp-shooters under Captain Breckinridge of the 2d Va. Cavalry and Company K of the 4th Va. Cavalry, commanded by Captain Moss, the latter having come up this morning.† These troops were in rifle-pits or in a dry mill-race, which in the present instance may be regarded and referred to as a rifle-pit. Deduction being made for horse-holders, Captain Breckinridge's command numbered about 45 and Captain Moss' about 85 men, or the two together about 130 men.

Averell was indignant at finding that the surprise of the enemy's picket had not been attempted. The left bank of the river was traversed here for a short distance by a road which had been worn down to the depth of about three feet by long usage. Under cover-afforded by this road, Hart's command was firing at Moss' men in the rifle-pits.

On catching sight of the Federal column, Captain Breck-inridge, commanding the remainder of the Confederate force, had mounted his men, and marched them to the rear to place his horses in a safe place. The first thing that suggested itself to Averell was to detach a small force to steal a passage above or below the ford, and take the enemy in rear. This he accordingly did, directing the movement below the ford. Major Chamberlain of the 1st Mass. Cavalry, his chief of staff, dashed down in the meantime to Captain Hart's command, and ordered it, including the main body of the 4th N. Y., to mount, form

^{*}Averell gives the hour as 8 a. m. (W. R., 39, p. 48); Lieutenant Browne as 6:30 a. m.; Colonel McIntosh as 6 a. m.; General Fitzhugh Lee as about 5 a. m. (W. R., 39, pp. 48-61), and Frederic Denison as about daylight (Sabres and Spurs, p. 208).

[†]General Fitzhugh Lee in his official report (W. R., 39, p. 61) makes no mention of Captain Moss' company, and says regarding Breckinridge's men: "Only about 11 or 12 of them got into the rifle-pits in time for the attack of the enemy (owing to an unnecessary delay in carrying their horses to the rear), which commenced about 5 a. m." But see the letter of Captain Moss in The Battle of Kelley's Ford, by J. B. Cooke, published by the Soldiers' and Sailors' Historical Society of Rhode Island.

in column of fours, and follow him across the river. On reaching the river's bank he was arrested by the abatis and his command overwhelmed with fire. His horse was shot in three places and he himself in the face. His men recoiled and retreated rapidly up the bank. Sending to Averell for pioneers. he obtained twenty men of the 16th Pa. with axes, whom he put to work cutting away the abatis. Two dismounted squadrons were placed by Averell in the sunken road to cover the axemen with their fire. By this time a couple of fieldpieces were unlimbered, and it would have been easy with their fire to demolish the enemy's defenses and drive him beyond the range of his carbines. But to do this would have been to announce the point of crossing and the magnitude of the expedition to Fitzhugh Lee. So Averell contented himself with keeping up the fire of his two squadrons, numbering 100 men, with a view to preventing the enemy from rising to take aim. Under cover of this fire Major Chamberlain again ordered the 4th N. Y. to follow him, and dashed at the river. The trees had been only partially removed, for the fire from the sunken road had not sufficed to protect the Federal axemen; and the fire from the enemy's rifle-pits had driven them from their work. It proved too hot for the men of the 4th N. Y. and they returned at breakneck speetl.

General Averell had placed himself on a little knoll to the left of the approach to the ford, and from this point overlooked and directed operations. His division stood in column of fours stretched out along the road, eagerly and anxiously looking for a chance to "mix in." The force detached to try a crossing below the ford had returned baffled by the depth and swiftness of the water and the precipitous character of the banks. There was nothing left to do but to force a crossing in the face of the enemy at the ford.

It was impossible to get into or out of the river until the abatis was removed, and the work of cutting it away had to be done under the fire of the enemy's carbines or rifles at the very short range of from 50 to 100 yards.

Major Chamberlain again showed himself the man for the occasion. Giving his valuables to a staff officer, he rode up to the main column and called for volunteers to carry the cross-

ing, offering the first opportunity to the regiment at the head of the column, the 1st R. I. The whole regiment replied by moving to the front. The nearest platoon, which was commanded by Lieutenant S. A. Browne, was selected and made ready for the dash. The fire from the sunken road was now keeping down that from the pits, and under its protection the axemen resumed their work, and made some progress toward opening the approach to the ford. They now ceased working and formed mounted in rear of Browne's platoon. The main body of the 1st R. I. and the 6th O. were moved up in support. The first dash was to be made by Browne with his eighteen troopers. Major Chamberlain placed himself at the post of danger and honor in front of Browne. The signal was given, and away they went. As soon as they entered the road they were subjected to a withering fire. Browne's men broke, and came back in confusion. Major Chamberlain's horse was mortally wounded just as it reached the water, and at the same moment the major himself received a second wound. A ball struck him in the left cheek and ranged down through the neck, the shock throwing him from his horse. He was dragged up the bank by the pioneers. There, sitting on the ground partially blinded with blood, he emptied the chambers of his revolver, firing first, it is said, at the fleeing Rhode Islanders, and then at the enemy on the opposite side of the river. The men, however, were soon rallied and brought back. With a cheer they went forward again, and dashed into the ice-cold water. Close behind them went the mounted axemen. The latter had left their carbines behind, and had their sabers fastened to their saddles to facilitate mounting and dismounting. As they pushed forward, intermingling with Browne's men, their axes shining and glittering above their heads, the ford and its passages presented a singularly picturesque scene suggestive of mediæval men-at-arms with their battle-axes. This party was followed by the remainder of the 1st R. I. and the 6th O.

Fortunately for Browne, the enemy was not altogether ready for him. Breckinridge had gone with his 60 men so far to the rear that he could not get more than about a dozen of them back into the rifle-pits by the time the assailants took to

the water. His handful of men, being short of ammunition. did not fire. Moss' 85 carbines divided their fire between Browne's little band and the two dismounted squadrons in the sunken road. As soon as Browne's men and the pioneers began to approach the south shore the Federal fire from the sunken road had to be suspended, which gave the enemy an opportunity to increase his. Captain Moss directed all the fire he could upon the gray horse ridden by the gallant young Federal commander whom he saw plowing the surging waters at the head of his column. The horse was a larger mark than its rider, and he knew that the horse being disabled, the rider would be also. Besides, the rider had won his admiration by his courageous bearing. The axemen, on arriving about in the middle of the stream, inclined to the right, going up-stream, some of their horses swimming. They landed above the road, and coming down to it, went to work with a will at the obstruction. Of the eighteen men of Browne's platoon who entered the ford with him, but three came out with him on the enemy's side, all the rest being either killed or wounded or having their horses disabled. The actual loss amounted to two men killed, three officers and five men wounded, and fifteen horses killed or rendered permanently unserviceable.* The axemen suffered little. The loss fell principally upon Browne's horses. Browne rode up the bank and fired a shot among the enemy in the rifle-pits now below him. Then turning toward the ford, he waved his sword to the main body of his regiment, and called on it to come on. A few of the leading men arrived, and broke through or over the obstructions. In the meantime the enemy in the rifle-pit, perceiving their inability to hold their position, commenced retiring toward their horses. Being afoot and pursued by mounted men, it was well for them that they started early. As it was, twenty-five of them were made prisoners. They were found to be armed with new English revolvers-Kerr's patent —and provided with ammunition recently made in Connecticut.+

The Federal advance formed close column of squadrons, throwing out pickets on the roads radiating from the ford.

^{*}Maine Bugle, October, 1893, p. 13.

[†]History of the 1st Mass. Cavalry, by D. H. L. Gleason, p. 117.



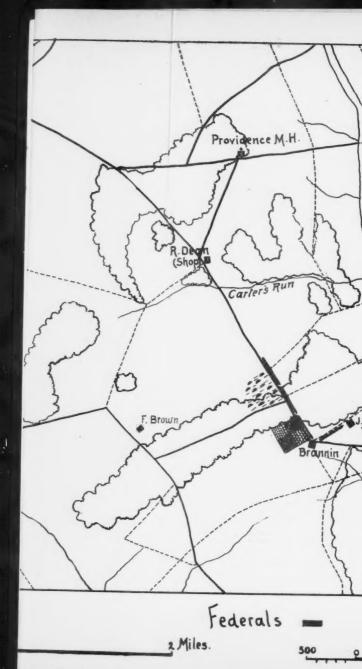


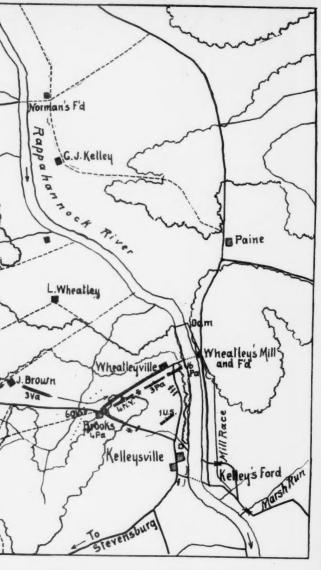
Engagement at Kelley's Ford, Mar





larch 17th, 1863.





Confederate -

1000

2000 Yards.



About two hours were spent in removing the obstructions on the south bank and getting the remainder of the force across. The ammunition for the artillery was taken out of the limbers and carried over by a squadron of cavalry in nose-bags, which was necessary in order to prevent its being wet. This precaution would be unnecessary with the fixed ammunition of the present day. The guns were dragged through the water, which came up to the tops of the limber-boxes. The division was formed up so as to meet the enemy in any direction. The horses were watered. On account of the narrowness of the ford this had to be done by squadrons, which caused considerable delay. In the meantime General Averell galloped to the front with a detachment, and made a hasty reconnaissance, which satisfied him that the proper place for the expected battle was an open field which he could see about three-fourths of a mile from the river. From what he had learned about Lee's position, and what he knew of him personally, he was confident that he would not await an attack in his camp, but would come out and attack Averell wherever he might be. So, about 10:10 a. m., everything being ready, Averell put his whole command in motion toward the forementioned field. The column marched through the hamlet of Kellevsville, consisting of six houses and a grist-mill, which the Confederates kept constantly employed; and took the road leading northwestward past R. Dean's to the railroad (Map 1*). The advance was formed of Duffié's brigade, the 6th O. being deployed as skirmishers, the 4th N. Y. and 1st R. I. following as supports. The movement was conducted with caution and as slowly as if made with infantry, the ground scouts dismounting to search the woods. A squadron was left at the ford as picket, or rearguard.

While Averell was crossing the river, Fitzhugh Lee was at Culpeper Court-House, awaiting news from the front. A report of the attack at the ford was sent to him, but failed to

The detachment of the 5th U. S. Cavalry, not shown on the map, was broken up into separate squadrons.

^{*}This map is based, in its main features, upon the Geological Survey map and in its details upon maps published in the Rebellion Records and other war time maps.

reach him.* The first intimation he received of an attempt to cross was at 7:30 a. m., to the effect that the enemy had succeeded in crossing, capturing 25 of his men who were unable to reach their horses.† Fitzhugh Lee at once moved his brigade at a rapid trot to the road junction about a mile and a half northeast of Brandy Station, ordering his wagons and disabled horses back to Rapidan Station.

Some time having elapsed, and the enemy not appearing, he pushed on rapidly toward the ford. About 12 m., as the Federal skirmishers emerged from a belt of timber about a mile from the ford, they received a volley from a dismounted squadron which Lee, thinking he had to do only with an advance-guard, had posted behind a stone fence a short distance from the wood. Averell at once deployed the 4th N. Y. dismounted on the right of the road, the 4th Pa. on the left, placed a section of artillery between them, and ordered the line to advance "to the edge of the woods and use carbines." The two dismounted regiments exhibited some unsteadiness; it required the exertions of General Averell and his staff to bring them under the carbine fire which was now sweeping the woods. But they soon regained their firmness, and opened an effective fire in return.

Averell ordered McIntosh to deploy his two regiments on the right, and Reno to send three squadrons to act as reserve

^{*}This statement is made on the authority of Fitzhugh Lee, who makes it in his report (W. R., 39, p. 61). It implies that the dispatch was delivered to the bearer or courier before the rifle-pits were abandoned. If this was the case and the courier started promptly on his mission, he could hardly have been captured. It cannot be supposed that he lost his way, for the route which he had to travel must have been generally known and easy to find or ascertain. He must have been exceedingly derelict.

^{†&}quot;This occasion as well as many others demonstrated the fact that the horse-holders in a cavalry fight should be the coolest and bravest men in the company. 'Number Four' has no right to be exempt from the perils of the battle. He holds the horses of his comrades only in order that they may more efficiently fight on foot; and he should always be near at hand to give whatever aid the occasion demands. In the present instance several brave men were captured simply because their horses were so far distant." (The Campaigns of Stuart's Cavalry, by H. B. McClellan, pp. 207, 208.)

[‡]W. R., 39, p. 49; Hist. of the 3d Pa. Cavalry, by the Regimental Association, p. 208.

for the right wing (McIntosh's command), and one squadron up the road to support the left (4th N. Y., 4th Pa., and 1st R. I.); he also ordered a section of artillery to operate with the right wing. The remainder of Reno's command, consisting of the greater part of the 1st and 5th U. S., he retained as a general reserve (Map 1).

As the 4th N. Y. and 4th Pa, advanced with a cheer against the stone fence, about 100 dismounted men of the 16th Pa., who were smelling powder for the first time, double-timed through the woods on the right, and came in the rear of the stone fence, causing the force that occupied it to beat a hasty retreat. The 4th Pa. and the 4th N. Y. established themselves behind the stone fence. The Confederates were seen advancing covered by mounted skirmishers, whose fire soon made itself felt. But Lee was not going to content himself with mounted skirmishing. At the head of his main column was the 3d Va. This regiment threw down a rail fence about 100 yards below Brannin's House, and moved to near I. Brown's House to form. Here Lee ordered it to charge. It did so in column of fours, directing the movement against the stone fence. Underestimating Averell's force and the extent of his front, Lee meant that this regiment should gain the right flank or rear of the Federal line. The Confederate troopers, finding that they were heading into a line of men firing dismounted with carbines, veered to their left, across the front of the Federal line, looking in vain for an opening, discharging their pistols with little or no effect, and receiving a withering fire from the Federal carbines. As they came opposite the Federal right they were joined by the 5th Va. The two regiments tried to gain the cover of the Wheatley house (Wheatleyville) to strike from there against the Federal right and rear, and cut the force off from the ford. But McIntosh, commanding Averell's brigade, was too quick for them. He had the building occupied by dismounted men of the 16th Pa., who with their carbine fire compelled them to fall back. Among the losses sustained by the enemy was John Pelham, the "Boy Major," Stuart's young and capable chief of artillery, killed by a piece of shell.*

^{*}His body was borne to the rear on the bow of the saddle of a fleeing Confederate trooper (The Life and Campaigns of Major J. E. B. Stuart. by

The 3rd and 5th Va. were badly shaken up, and should have been charged as they retired, but General Averell had no troops in position from which an effective charge could be made: besides, Lee's strength had not yet been developed, and the charging force might, he thought, be exposed to a destructive counter-attack. About this time Colonel Duffié, on the Federal left, started on his own responsibility to lead his brigade out in front of Averell's line as an invitation to the enemy to advance. The colonel was a Frenchman, formerly an officer of the 4th Chasseurs d'Afrique. He was a good swordsman, believing in the efficacy of the saber and the mounted charge, and had imbued his command with his own dashing spirit. Duffié was hurrying his regiment (1st R. I.) "front into line" on the head of his column, when a line of sabers was seen flashing along the edge of the woods immediately in his front. It was the 1st, 2d and 4th Va. regiments, which, requiring no invitation, were advancing in three lines under Lee at a trot. The Federals awaited at a halt their approach to within 50 or 100 yards, when the 1st R. I. dashed forward to the charge, followed on its right by the 6th O. and the two squadrons of the 4th Pa., and on its left by two squadrons of the 5th U.S. At the same time the 3d Pa., clearing the ground lately covered by the 3d and 5th Va., threatened to take Lee's lines in flank and rear. There were thus nearly four Federal regiments in action against the three Confederate. The former were not only numerically stronger and in better condition than the latter. but, with their broader front had a better formation for attack. The Confederates, perceiving the hopeless disadvantage at which they were placed, fired a few shots with their pistols, wheeled rather irregularly by fours and platoons to the right. and immediately repeating the maneuver, made off in haste, pursued principally by the 1st R. I. Among the prisoners taken by the latter was Major Breckinridge, a cousin of the Vice President of the Confederacy. A portion of the 1st R. I. carried the pursuit too far. A fresh squadron of the enemy

Major H. B. McClellan, p. 217). In his purse was found, folded away, a slip of paper on which was written by a Federal officer, once his companion and friend: "After long absence I write,—'God bless you, dear Pelham; I am proud of your success'" (New York *Times*, May 3, 1863).

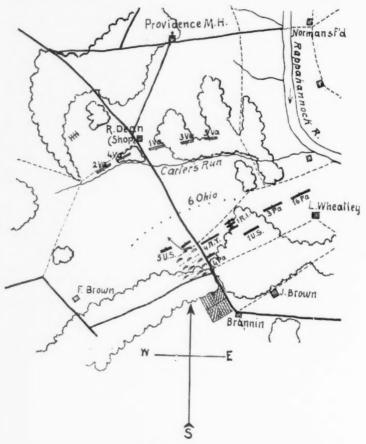
being thrown into the running fight, two officers and eighteen men of the Federals were captured. This squadron of the enemy was met by a charge of two squadrons of the 5th Regulars. Lieutenant Nathaniel Bowditch, of the 1st Mass. Cavalry, an assistant adjutant-general on Duffié's staff, was mortally wounded after having cut down three men. A squadron of the 3d Pa. on the right spontaneously rushed forward to join in the pursuit, but was promptly recalled. Averell then and there issued a very emphatic order, that troops once assigned a position in line should under no circumstances leave it without orders from himself or some one designated by him as competent to give such orders. Such an order is prohibitive of effective cavalry action.

The 3d Pa. crossed the field in echelon of squadrons at a walk, annoying the retreating enemy with volleys from the saddle, and as it neared the next wood, formed "front into line" at the trot. The 16th Pa. accompanied this movement on the extreme right. The 1st U. S. was, for the greater part, still in reserve under Reno.

Prisoners taken in the last charge stated that Stuart himself, with his chief of artillery, was on the field, from which Averell apprehended that more than Fitzhugh Lee's brigade would soon be before him. Stuart's chief of artillery, as already stated, had fallen. Stuart was indeed on the field, but he had brought no troops with him. He and Pelham, happening to be at Culpeper Court-House on court-martial duty, had simply come out with Fitzhugh Lee to see the fight.

Being driven at every point, Lee withdrew about a mile, rallied his command, and formed line across the road on the north side of Carter's Run, with mounted skirmishers in front (Map 2). Behind his right wing stood a battery of four guns, which had not been able to come up in time to take part in the first encounter. Averell spent a half-hour or more preparing to advance. He marched in line of columns. His left, formed of the 1st R. I. and 6th O., rested its left on the road, the ground on the left of the road being impracticable. The scattered sections of artillery were assembled, and the battery advanced with the cavalry to the further edge of the next strip of wood, where it formed in battery to receive the enemy, who

was expected to make a charge. Here two of the pieces were sent to the rear, their ammunition being nearly exhausted. After an appreciable delay the battery advanced in column of pieces, following and overtaking the cavalry. The latter in



MAP 2. SECOND PERIOD. (Scale same as Map 3.)

the meantime had come under the fire of the enemy's battery. Emerging from the strip of wood, and discovering the enemy, the Federal cavalry halted and formed line. The two lines were separated by an open field about 600 yards wide, sloping

gently down from each side toward Carter's Run. The ground beyond the Federal left was now practicable, it was necessary to extend the line in that direction. This was done by the 5th U.S. under a heavy fire of artillery and small arms (Map 2). In his present position Averell again waited to be attacked. Again the enemy accommodated him. Lee ordered his whole brigade to charge. From his left, the 1st, 3d and 5th Va. regiments steered for the center of the Federal right. Crossing Carter's Run and reforming, they directed their course on three squadrons of the 3d Pa. Cavalry, which had been posted on the outer edge of a small wood. In the Federal squadrons the front rank had advanced carbines, and the rear rank drawn sabers.* The enemy was impeded by the soft ground, and a scattering fire from several squadrons of the 16th Pa., on the right of the 3d Pa. He was not within 100 yards of his objective, but his line was commencing to sift to pieces. More than half of the men had halted or were proceeding in a half hearted way. A few only of the most daring spirits on the best horses arrived within from twenty-five to fifty yards of the Federal line. The Sharp's breech-loading carbines in the front rank of the 3d Pa. were now brought to an aim, and volley after volley was delivered with effect. The assailants pulled up, turned about, and retired in small squads to reform on the ground whence they started. As soon as General Averell perceived that it was the purpose of the enemy to charge on this part of the line, he hurried up Reno's command, the 1st U. S. Cavalry, and placed it in position about 100 vards to the left and slightly in advance of the 3d Pa., with the intention of making a countercharge on the right flank of the advancing line as soon as the latter had made contact with the 3d Pa. But as the charge terminated in the air. Reno could not execute this counterattack, and he was prohibited by Averell's forementioned order from pursuing. The 3d Pa., too, was prevented by the same order from rushing at once on the disorganized enemy.

^{*}The Federal cavalry was formed at that time, as most European cavalry is today, in double rank, which formation has been totally discarded in the U. S. cavalry since the war.

despite the order, individual officers and men rode out from both sides and engaged in hand-to-hand contests.*

Not until after the shattered squadrons had in a measure recovered their spirits and formation did the order come for the 3d Pa. to charge. Carbines were dropped, and sabers drawn; the regiment dashed forward and drove the enemy from the field.

Lee's right, consisting of the 2d and 4th Va., made an attack on the Federal left, aiming apparently at the supports of the battery, the four pieces of which had just come into action. The Confederate formation was column of squadrons. Starting at a trot, and passing to a gallop, and then to a charge, the velling and cheering lines, firing an occasional shot from a pistol or carbine, swept on toward the ranks of motionless figures with drawn sabers silently awaiting them. The battery opened on them with shell at 1500 yards, with shrapnel at about 1000 yards, and with double-shotted canister at about 400 yards. The leading squadron had begun to waver, files were breaking off from its right and left. Simultaneously with the first belch of canister rang out the command—"Charge!" The expectant horsemen, giving sudden vent to their pent-up feelings and energy, shot forward. The enemy could not stand up to the impending shocks. The Federal force comprised the 1st R. I. and parts of the 5th U. S., 6th O., and 1st U. S.† Lee's dashing horse-men had again to give way before Averell's superior numbers. They broke and ran in disorder leaving a number of dead, wounded, and prisoners. The pursuit was conducted by Reno. He did not return to the line, but halted about a mile in advance of it, or about on the ground vacated by the enemy, where he was joined by the rest of the Federal cavalry. The Confederate cavalry halted about half a mile in rear of their late position, where it was

^{*&}quot;Since the crossing of the river there had been many personal encounters—single horsemen dashing at each other with full speed, and cutting and slashing with their sabers until one or the other was disabled. The wounds received by both friends and foes in these single combats were frightful—such as I trust never to see again" (New York Times, March 20, 1863).

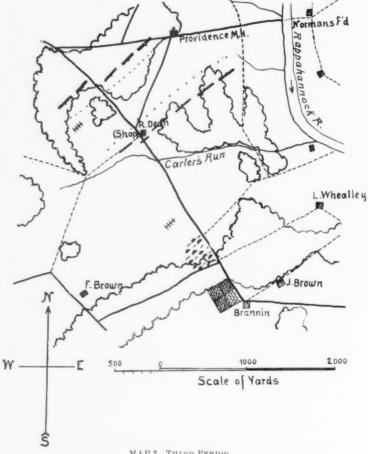
^{*}Battle of Kelly's Ford, by J. B. Cooke, p. 28; History of the 3d Pa. Cavalry, by Committee, p. 213.

concealed for the greater part by woods or swells in the ground. The artillery on both sides remained in its late position (Map 3). For a considerable time there was not a formed body of Confederate cavalry on the field. The Confederate battery was engaged with the Federal battery. All that Averell had to do to rid the country of Fitzhugh Lee's cavalry was to launch his own after it, reckless of everything but speed, to pulverize the fragments of Lee's shattered regiments, and scatter the particles far and wide. But he did not attempt it. About this time he heard that infantry had been seen at a distance on his right moving toward his rear, and he himself heard cars running on the railroad in rear of the enemy, which he supposed were bringing reinforcements. As a matter of fact there was no infantry nearer his opponent than the Confederate army about Fredericksburg; and the cars which he heard were moving back and forth by Fitzhugh Lee's order to discourage the Federals, and perhaps to encourage his own men. Averell got the idea that the enemy's line was covered with earthworks; it had no protection but what was afforded by the terrain. He says in his report:

"It was 5:30 p. m., and it was necessary to advance my cavalry upon their intrenched positions, to make a direct and desperate attack, or to withdraw across the river. Either operation would be attended with immediate hazard. My horses were very much exhausted. We had been successful thus far. I deemed it proper to withdraw."

Detachments of cavalry were deployed in front of the artillery, and the division commenced its return march. Captain Reno, with the 1st and 5th U. S., covered the rear. His task was anything but an easy one, the battery having almost exhausted its ammunition, and having therefore to fire very slowly. The enemy, taking advantage of this fact, followed it up with the fire of his battery. Once or twice Reno halted to allow him to come up, but the latter contented himself with long-range firing. The enemy's object was to drive away the cavalry escort with artillery fire, and then charge the battery. The Federal cavalry had therefore to stand this fire, and stay with the battery. To have left it would have been to surrender it to the enemy. The battery lost heavily in horses, but, under the protection of its gallant escort, brought off all its

guns. The sound of the artillery firing reached the ears of the Federal troops celebrating St. Patrick's day in their camps about Falmouth.*



MAP 3. THIRD PERIOD.

The Federal cavalry had crossed the river about 2200 strong, with supplies for four days and orders to rout or destroy an enemy about half as numerous as itself. About twelve hours later it returned; it had advanced but about two

^{*}New York Times, March 22, 1863.

and one-half miles (to R. Dean's Shop), or less than one-fourth of the distance to the enemy's camp (Culpeper Court-House), and had done him no serious injury.

Averell says in his report:

The principal result achieved by this expedition has been that our cavalry has been brought to feel their superiority in battle; they have learned the value of discipline and the use of their arms. At the first view I must confess that two regiments [4th N. Y., 4th Pa.] wavered, but they did not lose their senses, and a few energetic remarks brought them to a sense of their duty. After that the feeling became stronger throughout the day that it was our fight, and the maneuvers were performed with a precision which the enemy did not fail to observe.

Averell's claim that the action elevated the morale of his command was undoubtedly well founded.* But it was not for this that he had been given 3000 troopers and four days' rations and ordered across the Rappahannock. He was to rout or destroy the enemy. As it was, the gain of his force in morale was probably offset by that of the enemy. For Fitzhugh Lee and his command felt that it was they and not the Federals who carried off the honors of the day. And it could hardly have been otherwise, unless they had been driven to their camp and captured or at least run out of it. The fight seems to have demonstrated that the Federal regiments were at least well drilled and disciplined as the Confederate, but that Averell had not the aggressiveness essential to the effective command of cavalry. His plan of action was based upon what he expected the enemy to do, rather than upon what he himself was ordered or determined to do. When he met the enemy, instead of proceeding to attack him, he took up a position and awaited his attack. This he did three times. In his third position neither side attacked, and he decided to withdraw. He did not make a single general attack.

To attain his object, he would have been justified in sacri-

^{*&}quot;The cavalry are in good spirits over their affair. . . . The enemy are not inclined to talk about it, and no slurs or insinuations come from their pickets" (New York Herald, March 20). "Rebel officers who have since met our own under the flag of truce seem to be very sore about the affair, and express astonishment at the splendid fighting of our cavalry. Fully one third of our wounded show marks of the saber, so close was the contest. The effect of the fight upon the tone of our entire army has been admirable" (New York Tribune, March 21).

ficing half of his command. How much of a loss did he incur? According to his own report, fifty-six in killed and wounded, and twenty-two in captured and missing. Lee claims to have captured twenty-nine. Accepting the latter number, we have a total of eighty-five, which is less than four per cent. of the force with which he crossed the river. Although on the offensive, he suffered less absolutely and proportionately than the enemy. Fitzhugh Lee gives his killed and wounded as ninety-nine, and his loss by capture as thirty-four. Averell claims to have captured forty-seven. Accepting the latter number, we have for Lee's total loss 146, or more than eleven per cent of his force

Averell's order depriving his subordinates of all initiative appears to have been caused by injudicious aggression on the part of Duffiè and other officers, which would show that the Federal officers were deficient in instruction and discipline. While Averell erred from excess of caution, Fitzhugh Lee may be criticised for excess of daring. His attacks were practically all directed against the enemy's front. This was just what Averell expected and wanted. Had Lee known Averell's tactical temperament as well as Averell knew his, or knowing it. taken advantage of it to make proper reconnaisances and execute flanking and turning movements, he might have struck Averell a disastrous blow. As it was, he did not strike an effective one. His every attack was followed, or might have been, by an advance of his adversary. It is hardly unjust to Lee or to Averell to say that Averell gave Lee a victory by retiring when he should not have done so.

The result of the contest was communicated to R. E. Lee by the following dispatches:

"Headquarters, Two miles from Kelley's Ford, "March 17, 1863, 7 p. m.

General R. E. Lee, Richmond, Va.:

"Enemy is retiring. We are after him. His dead men and horses strew the roads.

J. E. B. STUART, Major-General.*

^{*}W. R., 108, p. 865. For similar dispatch see Richmond Enquirer, March 19, 1863.

"Headquarters, Culpeper, March 18, 1863.

"General R. E. Lee, Richmond, Va.:

"I telegraphed you last night enemy had retired (to) north bank of Rappahannock. From the best information it was Averell's division, 3,000 in the saddle. Pork and hard bread packed in boxes. He was very badly hurt, and left a hospital on this side. It was undoubtedly intended as a great expedition, but, thanks to the superior conduct of General Fitzhugh Lee and his noble brigade, it has failed.

"I. E. B. STUART."*

The following congratulatory orders were issued from Stuart's and Fitzhugh Lee's headquarters:

Stuart

"The series of fierce contests in which Brig. Gen. Fitz Lee's brigade was engaged on the 17th instant, with the enemy greatly superior in numbers, resulting in entire success to us, reflects the highest credit on its commander, its officers, and its men. On no occasion have I seen more instances of individual prowess—never such heroic firmness in the presence of danger the most appalling. The enemy, afraid to contest the palm as cavalry, preferred to rely upon his artillery, ensconcing his cavalry, dismounted, behind stone fences and other barriers, which alone saved him from capture or annihilation, thus converting the long-vaunted raid, which was 'to break the backbone of the rebellion' with preparations complete for an extensive expedition, into a feeble advance and a defensive operation."

Fitzhugh Lee

"The general commanding the brigade announces to his command his high gratification and proud appreciation of their heroic achievements upon the ever-memorable 17th instant. The enemy crossed the Rappahannock at Kelley's Ford with a force of certainly not less than 3,000 cavalry and a battery of artillery. Confident in numbers and equipments, it was their purpose to penetrate the interior, to destroy our railroads,

^{*}W. R., 108, p. 686.

to burn, rob, and devastate, and to commit their customary depredations upon the property of our peaceful citizens. Soldiers of the brigade! you have been taught a lesson, and the enemy have also profited. . . . Rebel cavalry have been taught that a determined rush upon the foe is the part of sound policy as it is the part of true courage. Rebel cavalry have taught an insolent enemy that, notwithstanding they may possess advantages of chosen position, superiority in numbers and weapons, they cannot overwhelm soldiers fighting for the holiest cause that ever nerved the arm of a freeman or fired the breast of a patriot. . . You have repeatedly charged an enemy sheltered by stone fences and impassable ditches, in the face of his artillery and volleys from thousands of his carbines. You checked his triumphant advance, and caused a precipitate retreat, with the legacy of his dead and wounded. . . . "

Averell's congratulatory order, if he issued one, is not to be found. Colonel Duffié, whose brigade may be said to have decided the first encounter, congratulated his command as follows:

"Again we have met the enemy, and beaten him at all points. . . . the enemy appeared in force, with their boasted 4th Virginia Cavalry in advance at a charge, supported in their flank and rear by three full regiments. Here was an opportunity—so long sought for—of meeting the rebel cavalry in a fair and square fight in an open field.

"The Rhode Island squadron dashed at their column, broke the head of it in a moment, and sent the whole body back to their reserves, capturing nearly all the charging regiment with its commander. Again the enemy came thundering down, and these squadrons, nobly supported by the 6th Ohio, again showed the chivalrous sons of the 'sacred soil' that on an open field they were no match for the hated Yankees. Although they were five to our one, a third time the lines were formed and this time by their famous Stuart, who had determined, if possible, to retrieve his evil fortune. On they came. And then took place that terrible hand-to-hand fight—man to man—

horse to horse—saber to saber—which ended in their utter defeat and our most glorious victory. . . . "*

Butterfield wrote to the commanders of the I, XI, and XII Corps:

"I send, for your information, the following synopsis of Averell's affair:

"He sent in a large number of prisoners (about 80), including one major. Captain Moore, of General Hooker's staff, who accompanied him, reports it as a brilliant and splendid fight—the best cavalry fight of the war—lasting five hours, charging and recharging on both sides, our men using their sabers handsomely and with effect, driving the enemy three miles into cover of earthworks and heavy guns. Forces about equal."

Hooker's judgment of the affair was decidedly different. He remarked:

. . After the brigadier-general commanding had permitted one-third of his force to remain on the north bank of the Rappahannock, his passage of the river with the residue of his force appears to have been eminently soldierlike, and his dispositions for engaging and following the enemy, up to the time of his recrossing the river, were made with skill and judgment; and had he followed his instructions and persevered in his success, he could easily have routed the enemy, fallen upon his camp, and inflicted a severe blow upon him. The enemy was inferior to the command he had in hand in all respects. The reason assigned—that he heard cars arriving at Culpeper, and not knowing but that they might be bringing reenforcements to the enemy-is very unsatisfactory, and should have had no influence in determining the line of that officer's conduct. He was sent to perform a certain duty, and failed to accomplish it from imaginary apprehensions."*

That Averell's generalship on this occasion was satisfac-

^{*}Sabres and Spurs, by F. Denison, pp. 315, 316.

^{*}W. R., 39, p. 1073.

tory to the powers at Washington was forcibly, if not elegantly, attested by the following communication from Stanton: "Major-General Hooker:

"I congratulate you upon the success of General Averell's expedition. It is good for the first lick. You have drawn the first blood, and I hope now soon to see 'the boys up and at them.' Give my compliments and thanks to Averell and his command."

How the conduct of Fitzhugh Lee's command was regarded by R. E. Lee is shown in the following letter of March 27 from Lee to Stuart:

"... I am much gratified at the noble conduct of the officers and men in repulsing a greatly superior force of the enemy, and compelling him to give up the attempt to strike a blow at our line of communication. The reports have been forwarded for the information of the Department, and as an evidence of the merit and gallantry of Fitz Lee and his brigade. I regret with you the loss of our noble dead, and concur in your commendations of the living."

So it would seem that everybody was satisfied except Hooker, and he was perhaps too severe in his criticism of Averell. \dagger

[†]For a defense of Averell's generalship, see *History of the 3d Pa. Cav.*, by Committee, pp. 216-225.

WATERING, FEEDING, GROOMING, ETC.

By VETERINARIAN COLEMAN NOCKOLDS, FIRST CAVALRY.

THE subject which Veterinarian Vans Agnew, 5th Cavalry, so ably advocates, would seem extraordinary, in that it should be the chief aim of a mounted organization to make its horses "fit," in traveling condition, but for the naked truth, that this is impossible under the present system of feeding and handling.

The reason for such short sightedness on our part is hard to comprehend. I venture to say, that any six average horses that are fed three times a day and properly looked after, taken from the shafts of a peddler's wagon, the race track, a livery barn or any horses that are used by civilians to do their regular work every day, would beat to a finish a similar number of troop or government animals in an endurance race under like conditions.

Doctor Vans Agnew calls attention to several things in connection with the bad treatment received by army horses. It must be admitted that it is not long and forced marches, raids, or the constant irregular employment of our animals that can be given as an excuse for what is literally the starving of animals for so many hours at a time.

He points out the physiological reasons why a horse should be fed and watered at least three times each day, and shows that racing-men, farmers, merchants and others that depend upon the horse for their living have learned by experience, handed down by generations, that they can only obtain the best results by keeping their animals in condition.

To have our horses "fit," so as to be able to undertake the severe exertions that might become necessary on short notice, such as long and fast marches, carrying a heavy weight or drawing loads, ought to be the object of every man in the

mounted branch of the service and others that have to do with animals.

The anatomical arrangement of the digestive system of the horse requires food that is wholesome, abundant, clean and sweet, the hours of feeding regular and the quantity given proportional.

As hav passes out of the stomach more rapidly, it should be given first, followed by the oats. To horses that are to be used soon after feeding, food of a concentrated kind should be given an hour or so before going out, and bulky food like hav withheld. The smallness of the stomach of the horse explains the golden rule of experience, "watering before feeding." At the same time it should be understood that the capacity of the stomach for water is exceptional. The proportion of water in the blood is 750 parts in 1,000, and an enormous quantity is required for the secretion of the gastric juice. The amount of this digestive fluid secreted daily necessary for digestive purposes, is 10 to 20 gallons, 99% of which is composed of water. During the twenty-four hours, the digestion demands for the formation of the gastric juice, double or treble as much water as there is blood in the whole body. Water passes with extreme rapidity from the stomach, being mostly absorbed by the structures on the internal surface, and passes directly into the blood, and not, as is commonly thought, into the intestines. This has been proved by repeated experiments. Substances dissolved in water taken in are found almost immediately after in the urine.

Always allow a horse to drink as much water as he wants, except immediately after feeding. In cases where the animal has been without water for an extra long period, caution should be used to see that the secretions that are necessary to the process of digestion are not checked. If the animal drinks more than is necessary for the digestive process, the excess is quickly got rid of by the kidneys, skin and lungs without doing much harm. If the animal is watered at or after feeding, digestive disturbances occur, perhaps followed by colic or even rupture of the stomach, either through the dilution of the gastric juice, which would stop its action, or because of the water crowding food that should be digested in the stomach into the

intestines undigested, where it acts as a foreign body. Even when a horse is heated it is better to let him drink a fair quantity, than to wait until the system has begun to flag, as the water is more quickly absorbed and the danger of a chill less.

It is quite safe to give one gallon of water to a horse immediately after the most violent exercise; another gallon may be given in five or six minutes, if the animal is very thirsty. Stinting a horse with water just before exercise, however seguere, affects his wind, by the blood becoming thickened, thus failing to circulate through the lungs with requisite freedom.

Severe exertion cannot be performed on a full stomach, because of the pressure on the diaphragm, which interferes with proper breathing, and the liability to cause digestive disturbances.

The fermentable nature of the food shows the necessity of due mastication, and proper mixture of saliva; the almost total inability of the horse to vomit points to the great danger to which the animal is exposed, should direct derangement of the stomach occur. A horse should not fast more than three hours at a time. After a prolonged abstinence, feeding in small quantities should be practiced. Three meals each day is the least number that a horse should have, four would be better. Bulk is necessary to intestinal digestion, but it must be introduced gradually. It is not possible to keep up condition and vigor on concentrated foods alone. Without roughness, the horse soon becomes tucked up and hollow in the flanks. One of the most common causes of sore backs on the march is the sudden alteration in the shape of the horse, not because he started out fat, or thin, but that he was not in condition.

A horse can live twenty-five days on water without food, but only eleven days with neither.

Grooming is almost as essential for the conditioning of horses, that are required to work, as feeding and watering; all being adjuncts that determine the degree of fitness of the animal.

Theoretically, the skin of a horse that has to do work of a kind that is likely to tax his utmost capabilities, has to be kept in a healthy state, to induce a like condition of the stomach, intestines and air passages, because the mucous membrane which lines these organs is a continuation of the skin, which it will be noticed becomes dull and unthrifty when the animal is suffering from any derangement of these organs. Return to health will be marked by an improvement in the appearance of the coat. Likewise, in most skin diseases the animal suffers from more or less digestive disturbances.

The skin of the horse is made up of two layers. The inner, or true skin, is tough and elastic, and is provided with nerves and blood vessels; in it exists a vast number of narrow, minute depressions, hair follicles, which secrete the hair that covers the body, and also an innumerable number of sweat-glands, and oil-glands, both of which possess minute tubes, which convey their respective secretions to the surface. The oil-glands are specially connected with the hair, as their tubes open either into the hair-follicles or close to the hairs. The action of the oil is to keep the skin and hair soft and pliable, and also to protect the skin from chill, that of the watery fluid is chiefly employed in carrying off by evaporation any excess of heat beyond the standard temperature of health.

The sweat of the horse is composed of a mixture of these two secretions, the former giving it a greasy character when he is fat, the preponderance of the latter a watery condition when he is thin or "drawn fine." The effect of friction applied to the skin is to draw to the surface an increased amount of blood, from which the glands in question obtain materials for forming their respective fluids.

The outer skin is secreted by the inner, or true skin, in the form of scales, more or less glued together, according to their distance from the surface. It lines the openings of the oil and sweat tubes, and surrounds each hair, its presence affords protection to the true skin and checks the outpouring of the oil and perspiration.

For this reason, horses that are turned out, without adequate clothing, should not be groomed, which process is intended to remove as much of the outer, or scraf-skin as possible, and by friction to stimulate the secretion of oil and perspiration.

The oil protects the skin from the injurious action of water, and also assists in maintaining the internal temperature

of the body, by rendering the coat bright and glossy, a condition which checks the radiation as well as the absorption of heat. A horse with a polished skin will not be as liable to be chilled by wet or cold, nor to be as unduly heated by the rays of the sun, as he would were his coat dull; this immunity, however, will only last for a few hours, or until the weather affects the hair. The skin acts as an assistant to the lungs in giving off carbonic acid gas, and thus helps to purify the blood. The coolness produced by the evaporation of perspiration materially aids in lowering the temperature of the body to its normal degree, when it has been raised beyond it by exercise.

The skin of a well groomed animal is in the best condition to play its allotted part, when the system is called upon to perform violent exercise, but not to resist the continued effect of cold during a period of inactivity. Animals not at work should be provided with an adequate supply of warm clothing, to make up for the loss of protection which is afforded by the scaly part of the outer skin, and by the increased amount of hair possessed in an ungroomed state.

The objects of grooming to carry out the theory are as follows: (1) To remove the scaly part of the skin in order to allow of ready exit to the fluids that flow from the oil and sweat glands. (2) To stimulate these glands by friction to increased activity. (3) To remove all superfluous hair, the presence of which would check evaporation from the skin. (4) To induce a healthy state to the skin itself, in which the mucous membranes of the digestive and respiratory organs will participate.

In practice the objects of grooming are to get rid of the dust, dirt, and the superficial layers of the skin which are being constantly cast off; to obtain a glossy coat, to stimulate the action of the skin by the process of friction, and to restore tone by massaging the muscular structures underlying the skin. Neglect grooming, and diseases of the skin are produced, particularly the parasitic forms caused by Pediculi and Acari. The brush should be used with and across the hair; it should have long bristles. The brushes used in the service, especially when they become a little worn, have too short and soft bristles to

make good grooming brushes. Brushing should be performed by at first applying the brush lightly, so as to avoid hurting the skin, and the pressure increased towards the finish of the stroke.

Few men are willing to expend the time and energy required in grooming a horse properly; elbow grease is usually lacking, and not enough weight thrown on the brush. It is generally applied in such a manner that superficial and not deep seated dirt is removed. This is markedly noticeable among horses belonging to mounted outfits. Horses that leave the lines apparently groomed to a finish, become covered with stuff resembling mud, immediately that they become a bit warmed up, instead of which, if the horses were properly cleaned, the sweat upon drying would leave their coats a natural color, with, perhaps, some of the hairs stuck together by the moisture. Of course, upon days when there is lots of dust flying it adheres to the sweaty coat.

The curry-comb, if used at all, except to clean the brush, should be applied very gently and neatly, and its sole use upon the animal should be to loosen hair which has become matted, with sweat and dirt, and to remove splashes of mud, thus pre-

paring the way for the brush.

Thorough cleaning of the mane and tail are important points; the dirt shows here the quickest, for the exfoliation of epithelium is here the most rapid. The hair should be separated in small bunches, and the brush applied with considerable force, care being taken to commence at the ends and work upwards, as each kink or knot becomes opened out, then the hairs should be brushed from their roots downwards so as to remove all dandruff. Wetting the hair of the mane and tail will make it grow faster. If the mane does not hang down properly, it should be daily wetted and plaited, and small weights attached to it, or a paste made of flour and water and applied to it. Holding it in place by tying it down with a cloth will make the hair in a few days lie flat.

Legs should not be washed, unless it is certain they will be properly dried before the animal is left. Wetting the legs is the most common cause of cracked heels. If the horse comes in with muddy legs, it is better to leave them to dry before

cleaning. They should be put in bandages, if there is the slightest sign of moisture or dampness remaining. A brush with long, fairly stiff vegetable bristles, commonly called a "Dandy" brush, is the best for cleaning the mane, tail and legs.

Washing the feet is to be condemned, as it renders them soft and weak, on account of the capillary attraction exerted by the fibers of the horn on any liquid with which it may come in contact. It is noticeable that horses bred and reared in dry climates have strong feet. No benefit can be obtained from the use of hoof ointment or dressing, except, perhaps, to those parts of the crust from which the hard and varnished covering of the wall have been rasped away by an ignorant or careless shoeing-smith. The growth of the horn of the hoof can alone be hastened by stimulating the coronet which secretes it; any material applied to the hoof itself is useless. It is a well known fact that greasy applications, that have been applied to the hoof and discontinued, cause brittle feet. At each grooming the feet should be examined, cleaned, and picked. Feet should not be "stopped" by any of the preparations made for that purpose, as they induce thrush, and soften and weaken the sole, frog, and crust.

The eyes, nostrils, and anus should be cleaned with a sponge or damp cloth.

The sheath is a portion often neglected, with the result that the secretions of this part accumulate, and in many cases the penis cannot be protruded. In certain parts of the country, where screw-worms and maggots exist, they cause considerable suffering before they are noticed, because of neglect in this matter. Cleansing of the sheath and penis should be insisted upon at least once each month. Some animals require it to be done every two weeks. Plenty of warm water and soap are all that is required for this purpose.

Finishing touches should be given by smoothing the coat with a chamois-skin or cotton cloth, care being taken to rub it in the same direction that the hair lies, beginning at the head and finishing at the legs and tail.

Washing horses as a rule is injurious, and should not be tolerated; it is a plea for laziness. A horse whose coat is washed never possesses the glossy appearance of the well

groomed animal. It not only removes the natural oil from the skin, thereby rendering the coat dull, but also is liable to produce chill, which is the fruitful source of many equine ailments. A man that is lazy enough to make a practice of washing his horse is certainly not energetic enough to thoroughly dry him.

When a horse comes in from work with a wet skin, he should be attended to at once. A good plan is to walk him quietly about until the coat dries and breathing settles down, or that he be rubbed vigorously with wisps of straw, principally against and across the hair. The space between the jaws should be dried carefully with a cloth, and hand-rubbing used, beginning at the ears, which should be pulled gently between the fingers several times, and ending at the legs. When hand-rubbing, the stroke should be commenced by bringing the flat of the hand (each one to be used alternately) well under the belly, down the forehand, thigh, gaskin or between the forelegs, as the case may be; it should then be drawn upwards with steady pressure. As the hand is raised, the elbow should be turned out, and the under part of the forearm be brought into play against the grain of the coat. In doing this the weight of the body and strength of the arm must be utilized. Wisping down takes about ten minutes; the hand rubbing somewhat longer.

Hand rubbing the legs is perhaps the most beneficial of all grooming for stabled horses. It prevents stagnation of blood in the legs and feet; by the pressure exerted it promotes the absorption of any effusion that may be present about the back tendons and suspensory ligaments, and it helps to guard the horse against that form of inflammation known as "cracked heels" and "mud fever."

The mane may be evened and trimmed by pulling out the longest locks, a little at a time, having previously twisted them around the forefinger or a stick. A space of about an inch and a half broad should be cut out of the mane, just behind the ears, for the passage of the headstall or the bridle.

If it can be so managed, a horse ought not to be groomed when he is shedding, as it exposes the hair follicles to the air, and, consequently, the growth of the hair is stimulated by the cold, which will cause the new coat to be rougher than it ought to be, and more or less spoil its appearance.

Tapotement is a form of massage practiced in France and England. It is done with broad circular pads, each one of which is about nine inches in diameter and three inches thick. They are stuffed with horse hair and covered with leather and a strap is fastened at the back to admit the hand, placed flatwise. They are used one in each hand, and are brought down in quick succession, with the whole force of the arm, on the spot intended to be shampooed. The neck, shoulders and hindquarters are gone over on each side of the animal. The loins and flanks are avoided. The usual method is to strike first with the left hand, then with the right, and again with the left, and then to bring the pads sharply together so as to knock out the dust. Tapotement has an excellent effect on the coat, and is much relished by the horse, when he has become accustomed to it. If practiced it should be performed immediately after grooming.

The efficiency of the horse, that is used for military purposes, provided his conformation is suitable, depends upon two things: Condition or "fitness," and being in hand "mise en main."

The former is brought about by the use of an intelligent system of feeding, watering, grooming and exercise. The latter is accomplished by properly training the horse, so that he understands at once what is demanded of him; by a correct combination of the seat, hands, legs, body and voice; without condition, this cannot be exacted to its utmost utility.

The forage allowance of 12 pounds of grain and 14 pounds of hay is a very liberal one, quite sufficient for horses doing the hardest duty, and of course should be cut down when animals are not working or doing very light duty. Fed three times each day, horses would receive more benefit, and a great deal less would be wasted. A horse of 14 hands needs little more than half the quantity of food that a full sized horse gets.

The quality of grain and bulk forage is important. Oats to be good should be over a year old, plump, short, hard, about the same size, and rattle when poured into the manger; pressed with the nail there should remain no mark, and they should chip when bitten rather than tear. The smell earthy and the taste slightly sweet. Oats is the grain par excellence for horses; the principles necessary for nutrition exist in the best balanced condition in them. The nitrogenous matters are double the fatty, and a larger amount is absorbed into the system than from any other grain, and it is most readily digested.

New oats are under a year old; they are indigestible, and when fed cause a horse to fall off in condition. The husk of new oats is shiny and bright, they are soft, and have an excessively earthy smell.

Old oats have lost the earthy smell, the husks are dull and

ened, taste bitter.

Kiln dried oats; oats that have been wet, or are too young to sell as good oats, are dried by artificial heat. These are dangerous to use.

dark, the flour feels dry in the mouth and is not easily moist-

They are told by their color, which is reddish, and the ends of their husks have a loose, shriveled appearance. They are often mixed with good oats to hide their smell, and bleached to destroy the color.

Foxy oats are those that have become damp and have fermented. They are red in color, have a peculiar smell and bitter taste. When fed they cause kidney troubles.

Funigated oats are artificially colored by exposure to sulphuric acid gas to improve their appearance, get rid of red color and increase their value; when rubbed in the hand the smell of sulphur is detected.

Bad oats are those that have become damaged at harvest, musty, mixed with dirt, or damaged by insects, rain, frost, etc. They have a disagreeable smell, have a bad color and bitter taste. Fed they produce diabetes.

Oats should weigh 40 to 44 pounds per bushel, inferior kinds as low as 32 lbs.

Barley should be given crushed or parched. Good barley has a thin, clean and wrinkled husk, closely adherent to the kernel, and should weigh 53 to 58 pounds to the bushel. If not free from awns it irritates the intestines.

Corn will fatten a horse and improve the look of his coat,

but he will lose energy and sweat easily. It should be fed only to animals used for slow work.

Bran should have a pleasant odor, be of yellowish tint and free from dust and dirt. Sawdust and sand are the principal adulterations. By putting the bran into water the sand will fall to the bottom. When rubbed between the hands it should slightly whiten them from the flour which it contains. If a horse gets "foul" and "loose" from too much grain, nothing is better than to keep him on dry bran and grass for a few days.

Bran mashes should be fed at least weekly. The laxative effect is probably more due to the mechanical irritation than anything else.

To make a bran mash properly, a stable bucket should be scalded with boiling water; then put into it about three pounds of bran and one ounce of salt, and pour in as much boiling water as the bran will take up. The mash should be well covered, so as to keep in the steam, and should be left to stand for a quarter of an hour. Dry bran has a binding effect, a bran mash is a laxative.

Good hay has always a greenish color; it is hard and long, clean and fresh, and possesses a well-known aroma and sweet taste. It should be at least one year old; an infusion should be of a good brown tint, in the bale the flowers partly retain their color.

Hay of medium quality, if old, is tasteless, brittle and dusty; it may be short and fine, or coarse and dark in color, aroma altered, taste pungent.

Bad hay is mouldy, brittle, offensive smelling, innutritious and perhaps nearly black in color; many kinds of weeds are found in bad hay.

Good and medium hay may be fed, but never bad.

Oat and wheat hay is cut about the time the grain is just losing its milkiness, and the green stalk is beginning to turn in color; the object being to get as much flour in the grain as possible, without allowing the stalk to become hard and dry. Although not to be compared with good timothy hay for conditioning, yet necessity compels the use of this forage in some parts of the country, and it has most of the essentials of bulk food.

Horses should never be without a supply of salt, a piece of salt placed where they can get at it at all times is best; the allowance of ordinary salt is two ounces each day.

Grass in its natural state should not be used to supplant dry forage. There is no doubt a horse is very fond of it, and a little does no harm, but it does not possess the necessary nour-ishment for horses that perform active exercise. Green grass relaxes the bowels, and possesses diuretic properties. Work animals fed on grass at the expense of grain rations become "soft" and unfit for labor.



THE HORSE SUPPLY OF RUSSIA AND THEIR REMOUNT SYSTEM.

BY AN OFFICER ABROAD.

THE NUMBER OF HORSES.

I T is often claimed that Russia is the richest country in horses. This may be just in as far as quantity is concerned, as statistics for 1906 prove that there are more than 30,000,000 horses in both European and Asiatic Russia. But as regards quality there arise some doubts.

Statistics for 1905, dealing with 16 provinces of only European Russia, show that the general total of 9,154,697 is composed as follows:

Stallions	245,569
Geldings	846,405
Mares	959,672
Total of working age, 5 years and over6,	051,646
Foals.	
Young horses (under 4 years)	747,297
4-year-olds	

Of these 89.8 per cent are owned by the peasant communities, 8.8 per cent by landowners and inhabitants of the country, and 1.4 per cent by inhabitants of towns.

These figures show that about 500,000 horses attain the age of 5 in any one year and this should be quite sufficient to meet military requirements if they were all suitable; nevertheless, the Russian Government has great difficulty even in peace time in supplying remounts. Col. G. Gusev, President of the Remount District of the Astrahan district, states in his articles published in military papers in 1907 that great difficulty is experienced in obtaining the 10,000-11,000 young remounts required annually for the cavalry, artillery and frontier guards,

and points out how much more difficult it would be to provide the 570,000 horses required in case of general mobilization.

A study of the list of various types of horses bred in Russia, which is given below and for the detail of which I am indebted to a publication of Col. Gulkevich, which renders it easier to understand how the difficulty arises and will show that in spite of the exceptional advantages which the Empire enjoys for breeding purposes, well-regulated assistance and careful supervision are necessary to secure a regular supply of animals suited to meet military requirements.

For some years past the budget has shown an annual increase in the grants for state-aided studs, numerous regulations have been issued to maintain the supply of horses in the Cossack communities and legislation is being considered to provide fresh suitable ground for private breeders when they are ousted from their present lands by change of conditions or by termination of leases.

THE IMPERIAL STUDS, STALLION DEPOT AND PRIVATE STUDS.

There are six imperial studs for breeding stallions to supply forty stallion depots, distributed over different parts of the Empire, with sires, the main object being to improve the horses of the country and especially those of the Don region. Five of the Imperial studs are situated in central Russia and the sixth in Poland. The Kryenovski stud provides draught-horse sires; that at Streletz sires of Arab blood; the Derkulski and Lanovski (Poland) studs provide thoroughbred English sires, and those at Novo-Alexandrov and Limarev half-bred sires.

The stallion depots in European Russia have a total establishment of about 4,400 stallions. Taking the total number of horses in European Russia at about 22,000,000, the proportion works out to one government stallion to over 5,000 horses. This proportion is considered too small and is held to account for about 90 per cent of the horses being weak and not higher than fourteen and a half hands. It is intended, therefore, to form eight new depots and to double the strength of the four existing ones. This year a new depot is to be formed in Astrahan of 100 stallions (75 of these to be purchased abroad) and in

the Viatka province the number of stallions is being increased from 50 to 100.

In the Don country there are numerous private studs for breeding the "Don" horse. The principal ones are: Mihailikov, 800 brood mares and 3,000 horses; Bezuglov, 400 brood mares and 1,500 horses; Pachapaev, 700 brood mares and 3,000 horses; and those at Pichvanov, Shronov and Korokov.

Outside of the Don country there are many private studs at which thoroughbreds are reared, of which the best are found in Poland. The Don country and the Caucasus provide more than half of the horses for the army, from 7,000 to 8,000 a year.

As a rule the horses are brought up in complete liberty, running free on the steppes under the supervision of guards.

VARIOUS TYPES OF RUSSIAN HORSES.

- 1. The Peasant Horse.—The majority of the horses (18,-000,000) at least, can be classed as the peasant horses. The type varies according to local conditions of the area. It is descended from the steppe horse and is very small, its height being only from 13 to 14 hands. Many are still smaller and probably only about one-sixth of the total number exceed 14 hands. It is used for agriculture and subsists in summer by grazing, whilst in winter it is given straw and hay as fodder. It is not suited for military purposes except for occasional use as transport, and then only in local carts to which it is accustomed.
- 2. The Russian Cart-Horse (bitiug).—The "bitiug" is the result of cross-breeding between the peasant mares and Dutch or Danish sires, started at the time of Peter the Great in the province of Voronesh. Further crossing with the peasant horse has caused the term "bitiug" to be less distinctive and the genuine bitiug is said to have been almost extinct in 1882. The name is still applied to cart-horses of good bone, while the less satisfactory animals are simply termed "heavy cart horses." The principal centers of cart-horse breeding are still Voronesh and Tambov, the best known being the peasant stud at the village of Shukavka, in the former district. The deterioration of the heavy draft horse is attributed to the peasants lacking sufficient pasture ground as well as to the need of fresh blood.

The biting averages 15.3 to 16 hands and can draw 5,400 lbs. or more. They are sometimes as high as 16.2 1-2. The peasants of Voronesh, Tambov and Penza have lately been taking active measures to improve the breed of cart-horses, stallions of the Clydesdale type being preferred. The Government stud authorities are also paying particular attention to assisting them by providing suitable draught-horse sires to travel these districts.

- 3. The Orlov Trotter or Russian Race-Horse.—In Russia the trotter is considered a distinctive Russian product. The breed was originated by Count Orlov Chsmenski by crossing Arab sires with English, Dutch and Danish mares. The horses run from 15.1 to 16.3 hands in height and are spoken of as belonging to the light or heavy type, the former being used for racing. Among the Imperial studs trotters are chiefly bred at that of Hrenov in the Voronesh province. The private studs prefer the light trotter, as it commands the best price.
- 4. The Orlov & Rostopchin Saddle Horse.—The former is descended from carefully selected Arab and English sires, the latter from a crossing of Arab sires with English thoroughbred mares. Specially selected sires and mares of the Orlov stud are placed aside to preserve the distinctive breed, whilst the others are used for crossing with the Rostopchin breed and with horses of English blood bred in Russia. Measures such as entering them in a stud-book have been taken to preserve the Orlov-Rostopchin breed of saddle-horses. It is considered particularly good for reproducing the characteristics of its stock in cross-breeding.
- 5. The Don Horse.—The "old type" was the result of crossing of local breeds, that is of the Tartar and the Caucasian horse. Although only from 14 to 14.3 hands in height, these horses are noted for their endurance, but the "old type" is disappearing and the "new type" becoming prevalent owing to the continued crossing of the local horse with thoroughbred and halfbred stallions of Arab and English blood. The result is an increase in height, 14.3 to 16 hands, but, it is said, a possible diminution in staying power. Besides providing the horses for the Don Cossacks, the Don studs provide annually 3,000 to 4,000 remounts, and consequently form one of the principal sources for mounting the cavalry.

- 6. The Half-Bred Saddle Horse.—This horse is the result of crossing the local mare with Arab or English stallions. Height up to 16.2 1-2 hands. They are bred in the Imperial studs of Novo-Alandrov, Streletz and Limarev. Of the private studs those of the Don are the most developed for rearing half-bred horses, but others are scattered over the vast extent of New Russia, Little Russia and the southwestern and southern parts of Great Russia.
- 7. The Streletz Horse.—Bred in the Streletz Government stud. As a rule this stud does not produce pure-bred Arabs, but Arab blood greatly preponderates. The typical Streletz horse has been produced by the crossing of Arab or Eastern blood with English or Olov-Rostopchin blood. In appearance it resembles a three-fourths Arab and is a good stayer. Average height, 15 hands. Prevalent color, grey.
- 8. The Pure-Bred Arab.—The pure Arab is bred only at the Derkulski Imperial stud in the province of Harkov, also at some private studs to provide sires for their own cross-breeding purposes. Height, 14 to 15.1 hands. A Russian stud-book is kept for Arabs. They are liked for the little attention they need when young, and are considered, with a good selection of mares, to produce suitable cavalry and even draught horses.
- 9. The English Thoroughbred.—The sire of pure English blood is considered the best for stud purposes and they are now bred in the Imperial studs of Derkulski in the Harkov province and Lanovski in the Siedletz province, also in private studs for the purpose of crossing with other breeds, more especially in Poland and the South of Russia. Height, from 14.3 to 16.3.
- 10. The Jmudz Horse.—A distinctive type of small northern horse, strong and hardy; height from 13 to 14.3. Prevalent color, chestnut with white mane and tail. They originate from crossing the local horses with the "klepper" (pony) of the Baltic provinces. They are practically confined to the province of Koyno and number about 100,000.
- 11. The Baltic or Esthonian Klepper (pony).—A hardy and strong animal bred in Esthonia and on the islands of Dago and Oesel. The breed is descended from the crossing of local mares with Arab sires brought by German crusaders to Germany

and thence to Livonia. Ordinary height, 13 to 13.2. Those that are higher than 14 hands are called double kleppers. The Government subsidizes two studs to preserve the breed, the principal one is on the island of Oesel, where there are about 16,000 horses. Some people advocate the use of this breed for the improvement of the peasant horse.

- 12. The Finnish Horse.—The Finnish horse is probably only a variety of the Baltic klepper, but is somewhat taller, 14 to 15.1 hands. It is used chiefly for agricultural work and for vehicles for hire in the towns. It is not fit for cavalry and consequently of little use to the army.
- 13. The Viatka Horse.—Average height, 13 hands. It is the result of crossing the local horse with the Baltic province pony in the time of Peter the Great and in later times with Finnish blood.
- 14. The Kirghiz Horse.—It is of Mongolian origin, having been brought to Siberia by the Kirghiz amongst the hordes of Chenghiz-Han. They are ugly, but inured to every hardship and in spite of being poorly fed will cover about 70 miles at a stretch at a rate of from five to ten miles an hour. They are not fully developed till 8 or 9 years, but it is common for them to be still working at 20. Height, 12.3 to 14 hands, occasionally 14.2 1-2. They are used chiefly as saddle horses by the Kirghiz themselves and by the Orenburg and Ural Cossacks. They are bred on the steppes of the Turgay, Orenburg, Akmolinsk, Semipalatinsk and Semirechensk provinces, and number about 7,000,000.
- 15. The Kalmyk Horse.—Is bred on the Kalmyk steppes to the northwest of the Caspian sea. Owing to the scarcity of forage it is not so numerous as the Kirghiz, but is strong, a good stayer and a good doer. Height, 14.1 to 15, a few of them reaching 15.3. The nomad Kalmyks in the province of Astrahan possess about 108,000 of these horses and they are used for both the regular and irregular cavalry.
- 16. The Bashkir Horse.—Is bred in the northern part of the Orenburg province and in those of Ufa, Samara and Kazan; it is descended from the Kirghiz horse, but the type has slightly changed owing to local conditions. The highland bred Bashkir

averages 12.3 to 14, and the lowland Bashkir 13 to 14.1 1-2 hands. They are chiefly used for harness work, but the highland breed is very compact and makes an excellent pack animal.

17. The Ural Horse.—There are two varieties, the "Uralian Kirghiz" and the "Uralian Cossack." The former does not differ from the Kirghiz horse, but the latter has been improved by a more careful selection of sires, and averages in height from 13.2 to 14.2, a considerable number reaching 15 hands.

THE CAUCASUS.

- 1. The Nogay Horse.—A variety of the Caucasian breed possessed by the nomad tribes, numbering about 20,000 souls, along the shores of the Caspian sea. Average height, 14 hands. Bred for centuries free on the steppes, they are inured to extreme heat and cold and have remarkable staying power. The Karanonogay horse-breeders possess about 14,000 horses, but they are not much bought for the army, for it is said that with change of food they lose their good qualities, grow lazy and do not acclimatize well.
- 2. The Karabakh Horse.—A variety of the Caucasian horse; it resembles a well-bred Arabian or Persian horse and is probably a descendant from these crossed with the Turcoman horse. Height, 14 to 14.3 hands. There are few thoroughbred Karabakh horses left, but they are still bred at a few private studs in the province of Elisavetpol. They are delicate and not acclimatized easily, and are therefore only used for the army when crossed with English blood.
- 3. The Kabarda Horse.—A variety of the Caucasian horse. Height, 13 to 14 hands. Excellent for mountain work and a cross with English blood would probably produce a good cavalry horse. There are many other varieties of the Caucasian horse, but the Kabarda is the most distinctive and the most widely spread. They are bought for the Caucasian brigades of the frontier guards, for the mountain artillery and for the Kuban and Terek Cossacks.

TURKESTAN.

- 1. The Turcoman-Teke Horse.—Descends from the old Turcoman and Arabian stock and resembles more an English horse. Height, from 14.3 to 16 hands. It is bred in the Tedjent, Mrev and Ashabad districts of Trans-Caspia and is stabled and clothed from its youth, an unusual thing for Russian horses. It is an excellent mount over the sandy steppes, but is considered not to stand well sudden changes in temperature and is therefore bought only for the cavalry of the South.
- 2. The Turcoman-Yumud Horse.—Bred in small droves by the Yumud tribe in southwest Trans-Caspia. It more resembles the Arabian type. Height, from 14 to 15.1 hands. Prevalent color, grey.
- 3. The Karabair Horse.—The result of cross-breeding between Kirghiz mares and Turcoman and Arabian sires. It is bred in large numbers all along the southwestern part of the Syr-Daria, Samarkand and Buhara provinces and is mainly used locally. Height, 14.1 to 15 hands.
- 4. The Kirghiz Mountain Horse.—Bred in droves of about 3,000 near the center of the Syr-Daria river, along the slopes of the Alexander mountains, and in the province of Semirechia. Maximum height, 14.2 1-2 hands. Hardy and good stayers.

SIBERIA.

- 1. The Tomsk Horse.—The result of cross-breeding of Russian with Kirghiz and Kalmyk horses. Ugly, but strong. Height, 14.3 to 15.1, a few reaching 16 hands. It is useful for artillery, but unsuited for cavalry remounts.
- 2. The Urman Horse.—Bred in the forest district of Urmani in the province of Tomsk, it has a good bone and short legs and is probably the best Siberian draught horse.
- 3. The Charish Horse.—Bred by peasants along the Charish river, it is the result of crossing the Tomsk horse with the Kirghiz and Kalmyk breeds. Height, 13 to 14.3. There are many similar types in Siberia and they are used for mountain artillery, baggage animals, mounted infantry detachments

of volunteers and orderlies, and for the frontier guards of Siberia.

- 4. The Altay Highland Horse.—Bred in the droves of the nomadic Kalmyks, who roam the valleys of the Altay mountains. They are ugly and coarse, but strong and good stayers. Inured to hardship and scanty food, they can cover long distances in all weathers and are good for mountain artillery, baggage, mounted infantry. Average height, 14 hands.
- 5. The Amur Horse.—Bred by the Amur Cossacks in droves of 10 and 20, they resemble the Manchurian horse, whose descendants they probably are. Though their average height is only 13.2, they are capital little beasts for a journey. A Cossack officer, Lieut. Peshkov, rode his Amur horse "Serko," from the town of Blagoveschensk to St. Petersburg, a distance of 5,492 miles, in 193 days. "Serko," whose height is only 13 hands, arrived perfectly fit and sound and is now in the Imperial stables at Tsarskoe Selo.

THE PURCHASE OF REMOUNTS FOR THE CAVALRY.

The Government studs do not supply remounts direct to the army, but they retain sufficient of the best stallions and brood mares that have attained the age of 3 to 4 years for their own stock and send the remainder of the stallions to the different depots all over the country at which private owners may on payment have their mares covered. The horses and mares not required as above are sold at public auction and many of these are acquired by the army for remounts. A Lieutenant-General holds the office of "Inspector of remounts and cavalry depots," and has a staff of two Major-Generals, an Adjutant and eleven Colonels, these last being the Presidents of the cavalry remount commissions for purchase of horses in the districts of Warsaw, Kiev, Elisavetgrad, Poltava, Harkov, Astrahan, Tambov, Westtern Don steppes, Eastern Don steppes, Nishne-Novgorod and northern Caucasus. The Commissions purchase the remounts at the latter end of September and beginning of October and may average the following prices:

Well bred saddle horses for cavalry and artillery\$	199.00
Well bred draught horses for artillery	
Trained steppe horses (saddle, draught and pack)	90.00
Unbroken Don and Kalmyk horses for cavalry and ar-	
tillery	70.00
Unbroken Astrahan and steppe horses for cavalry and	
artillery	90.00

In Siberia saddle and draught horses for artillery average \$105, and pack horses for mountain artillery, \$65.

As soon as purchased the horses are sent to the cavalry depots and are allotted to squadrons according to color.

THE CAVALRY DEPOT SYSTEM.

For each regiment of regular cavalry there is a cavalry depot squadron which in peace partially trains remounts for it, and in war forms a depot for the regiment in the field. These 65 squadrons are in peace kept quite separate from the active regiments, 61 of them are grouped into nine depot regiments, three into the Caucasian division and one (20th Finland Dragoons) is left independent.

The Guard depot regiment of ten squadrons is not brigaded, the remaining eight (one of nine squadrons and seven of six squadrons) are further grouped into three brigades.

In round figures each depot counts from 70 to 80 duty men, of whom about half are second term soldiers and half are young soldiers. The squadron has sixteen cadre horses and prepares annually about 90 young horses for work in the active regiment. In time of war each depot squadron expands by receiving reservists and requisitioned horses into two marching squadrons, each of five officers, 180 combatant and eleven noncombatant N. C. O.'s men and 211 horses. These marching squadrons are sent after their corresponding regiments as soon as possible. A dismounted detachment of 180 men remains, and subsequent drafts of reserve men and horses are sent to join as required. It will be seen that to form all these marching squadrons is no light undertaking, for they require at least 700 officers and 35,000 men from the reserve and about 30,000 requisitioned horses. The system as regards the preparation of young horses in peace time has been criticised as costly, the depot cavalry costing about \$1,200,000 a year.

Cossack cavalry depots do not exist in time of peace, but on mobilization there is formed for each group or "chain" of three regiments of the 1st, 2nd and 3d category, a depot squadron of three officers, 224 men and 222 horses, which makes good losses in men and horses in all the regiments affiliated to it. The number of squadrons formed would be eighteen Don, eleven Kuban, four Terek, one Astrahan, six Orenburg, three Siberian, one Semirechensk and two trans-Baikal and three Ural. A recent order directs that the depot squadrons or reserve sotnia will also form horse reserve detachments to receive and train horses to make good wastage in war.

THE TRAINING OF THE REMOUNT.

The depot squadrons receive the newly purchased remounts in the autumn of each year. Few of them have ever been stabled or had hard food, so they are much more backward in their development than would be English horses of a like age. The following autumn they are sent from the depot squadrons to the active regiments and are considered only partially trained but ready to begin lessons at the canter. The regiments continue the training in the manege during the long Russian winter, and they are first put into the ranks for the troop training when the regiments proceed to camp in May, that is at least eighteen months after their purchase. During their first summer's camp training they may still be excused long days and maneuvers. The period of a horse's service is considered to be about ten years, therefore, regiments are permitted to cast annually ten per cent. Horses are not kept after twelve years' service, and the cast horses may be purchased by officers of other arms for prices varying from \$10 to \$25.

The Officers' Cavalry School at St. Petersburg receives annually 6 Guard, 32 Line, 23 Cossack Cavalry officers, and 32 N. C. O.'s and men. The course is for two years, and the instruction in the training of horses has for the last ten years been confided to Mr. Fillis. It is unnecessary to allude to his system here, for it is fully explained in his book on horse training, which is to be procured in an English version. Mr. Fillis' engagement terminated in 1908, but no doubt his system will be continued. Lately a few Russian officers have been sent to attend the French Cavalry School at Saumur.

A CRITICISM OF OUR CAVALRY DRILL REGULATIONS.*

By H. H. SARGENT, Major Second Cavalry.

THE greatest fault of our "Cavalry Drill Regulations" is that no system, no principle, seems to have been followed in the writing of the commands. If we wish to deploy a squadron from line into a line of skirmishers the commands are, 1. As skirmishers, 2. On (such) troop, 3. MARCH. (684). But if, after deployment, we wish to assemble on a designated troop the commands are not, 1. Assemble, 2. On (such) troop, 3. MARCH, but are, 1. On (such) troop, 2. Assemble, 3. MARCH. (691).

If we wish to assemble the skirmishers by platoons the commands are, 1. Assemble by platoons, 2. March. (565). But if by troops the commands are not, 1. Assemble by troops, 2. March, but are, 1. Troops, 2. Assemble, 3. March, (692). And if we wish to assemble the squadron the commands are not, 1. Assemble, 2. On (such) troop, 3. March, but are, 1. On (such) troop, 2. Assemble, 3. March. (691).

If we wish to form column of platoons from line of platoon columns the commands are, 1. Column of platoons, 2. First (or Fourth) troop, 3. Forward, 4. MARCH. (661). But if we wish to form column of fours from mass the commands are not, 1. Column of fours, 2. First (or Fourth) troop, 3. Forward, 4. MARCH, but are, 1. Column of fours on first (or fourth) troop, 2. MARCH. (637).

Or if we wish to form column of platoons from line of platoon columns in a direction parallel to the front of the line the commands are, 1. Column of platoons, 2. First (or Fourth) troop, 3. Forward, 4. Column right (or left), 5. MARCH.

^{*}Numbers in parenthesis refer to paragraphs of the Cavalry Drill Regulations, 1909.

(661). But if we wish to form column of fours from mass parallel to the front of the mass the commands are not, I. Column of fours, 2. First (or Fourth) troop, 3. Forward, 4. Column right (or left), 5. MARCH. but are, I. Column of fours, 2. First (or Fourth) troop, 3. Column right (or left), 4. MARCH. (637).

If the regiment is in line of platoon columns and we wish to march in column of platoons the commands are: I. Column of Platoons, 2. First (or Fourth) troop, (first or third) squadron, 3. Forward, 4. MARCH. (798). But if the regiment is in line or column of masses and we wish to form column of fours the commands are not, I. Column of fours, 2. First (or fourth) troop, First (or third) squadron. 3. Forward, 4. MARCH, but are, I. Column of fours, 2. On first (or fourth) troop, first (or third) squadron, 3. MARCH. (784)

If the regiment is in line of masses and we wish to form line of fours the commands are, 1. Line of fours, 2. On (such) troop, (such) squadron, 3. MARCH. (787). But if the squadron is in mass and we wish to form line of fours the commands are not, 1. Line of fours, 2. On (such) troop, 3. MARCH, but are, 1. On (such) troop, 2. Line of fours. 3. MARCH. (629).

If in the squadron we wish to form line of platoon columns to the right from column of platoons the commands are, I. Line of platoon columns to the right, 2. MARCH. (654). But if we wish to form them on the right the commands are not, I. Line of platoon columns on the right, 2. MARCH, but are, I. On right into line of platoon columns, 2. MARCH. (655). And if we wish to form them to the right front the commands are not, I. Line of platoons columns right front, 2. MARCH, but are, I. Right front into line of platoon columns, 2. MARCH. (656).

If the squadron is in column of fours and we wish to form mass to the right the commands are, 1. Mass to the right, 2. MARCH. (636) But if we wish to form mass on the right the commands are not, 1. Mass on the right. 2. MARCH, but are, 1. On right into mass, 2. MARCH. (634). Or if we wish to form mass to the right front the commands are not, 1. Mass right front, 2. MARCH, but are, 1. Right

front into mass, 2. March. (631). Or if we wish to form line of fours on the right from column of fours the commands are not, 1. Line of fours on the right, 2. March, but are, 1. On right into line of fours, 2. March. (635). Or if we wish to form platoon columns of fours on the right from column of fours the commands are not, 1. Platoon columns of fours on the right, 2. March, but are, 1. On right into line, 2. Platoon columns of fours, 3. March. (635).

Again, if we wish to form line of fours on the right from column of fours the commands are, 1. On right into line of fours, 2. MARCH. (635). But if we wish to form platoon columns of fours on the right from columns of fours the commands are not, 1. On right into line of platoon columns of fours, 2. MARCH, but are, 1. On right into line, 2. Platoon columns of

fours, 3. MARCH. (635).

If the squadron is in line of platoon columns and we wish to form echelon the commands are, 1. Form echelon, 2. On (such) troop, 3. MARCH. (668, 666 and 516). But if the squadron is in line of platoon columns and we wish to extend intervals the commands are not, 1. Extend intervals, 2. On (such) troop, 3. MARCH, but are, 1. On (such) troop, 2. Extend intervals, 3. MARCH. (659).

If the squadron is in mass and we wish to form column of fours perpendicular to the front of the mass the commands are, I. Column of fours on first (or fourth) troop, 2. MARCH. (637). But if we wish to form column of fours parallel to the front of the mass the commands are not, I. Column of fours on first (or fourth) troop, 2. Column right (or left), 3. MARCH, but are, 1. Column of fours, 2. First (or Fourth) troop, 3. Column right (or left), 4. MARCH. (637). Yes, we must remember to put in the "on" in one case and to omit it in the other, and we must also remember to leave the "forward" out in both cases, although the captain of the troop in question is himself required to put it in, and although we ourselves are required to put it in in an almost exactly similar case, namely, when we form column of platoons from line of platoon columns. (661). In passing, it should perhaps be remarked that the word "on" in the above command (637) is incorrectly used. The column of fours is not made on the

"first (or fourth) troop"; it is made, in part, by the "first (or fourth) troop. In the commands, I. Line of fours, 2. On (such) troop, (such) squadron, 3. MARCH, (787), the "on" is correctly used.

In paragraphs 631 to 636, inclusive, the following commands are given for forming mass, line of fours, or platoon columns of fours, from column of fours.

- (1) 1. Right front into mass, 2. MARCH.
- (2) 1. Right front into line of fours, 2. MARCH.
- 1. Right front into line, 2. Platoon columns of fours,
 MARCH.
 - (4) 1. On right into mass, 2. MARCH.
 - (5) 1. On right into line of fours, 2. MARCH.
- (6) 1. On right into line, 2. Platoon columns of fours, 3. March.
 - (7) I. Mass to the right, 2. MARCH.

Examining these seven commands we find that 1, 2, 4 and 5, follow one system, that 3 and 6 follow another system and that 7 follows still another system. If the first system mentioned had been followed throughout, the seven commands would have been written as follows:

- (1) 1. Right front into mass, 2. MARCH.
- (2) 1. Right front into line of fours, 2. MARCH.
- (3) 1. Right front into line of platoon columns of fours, 2. MARCH.
 - (4) 1. On right into mass, 2. MARCH.
 - (5) 1. On right into line of fours, 2. MARCH.
- (6) I. On right into line of platoon columns of fours.
 2. MARCH.
 - (7) I. To the right into mass, 2. MARCH.

If the second system mentioned had been followed throughout, the seven commands would have been written as follows:

- (1) 1. Right front into, 2. Mass, 3. MARCH.
- (2) 1. Right front into, 2. Line of fours, 3. MARCH.
- (3) 1. Right front into line, 2. Platoon columns of fours, 3. MARCH.
 - (4) 1. On right into, 2. Mass, 3. MARCH.
 - (5) 1. On right into, 2. Line of fours, 3. MARCH.

- (6) 1. On right into line, 2. Platoon columns of fours. 3. MARCH.
 - (7) 1. To right into, 2. Mass, 3. MARCH.

If the third system mentioned had been followed throughout, the seven commands would have been written as follows:

- (1) 1. Mass to the right front, 2. MARCH.
- (2) 1. Line of fours to the right front, 2. MARCH.
- (3) 1. Line of platoon columns to the right front, 2. MARCH.
- (4) 1. Mass on the right, 2. MARCH.
- (5) I. Line of fours on the right, 2. MARCH.
- (6) 1. Line of platoon columns on the right, 2. MARCH.
- (7) 1. Mass to the right, 2. MARCH.

From the Cavalry Drill Regulations many other examples might be cited showing a lack of system in the written commands, but the above are sufficient to illustrate the point we are attempting to make.

Referring again to the above mentioned seven commands, as written in the Drill Regulations, we would call attention to the fact that the first six tell us how to execute certain movements before telling us what the movements are that are to be executed. That is to say, they tell us the manner or method of doing a thing before telling us what is to be done. For instance, in number 1. (631), the thing to be done is expressed in the word "mass," and the manner of doing it in the words, "Right front into." But in number 7. (636), as written in the Drill Regulations, the thing to be done comes first and the manner of doing it secondly. This latter way of giving commands is the simplest and most logical; for a command which begins with a statement of what is to be done, and is followed by a statement of how to do it, is always more easily understood by the officers receiving it and more easily remembered by the officer giving it than if the reverse process is followed. Moreover, this is the natural process which we follow in the giving of orders in our every day experiences. We first tell the person what he is to do; then, if necessary, explain to him the manner of doing it. Knowing

first what is to be done, he is then free to concentrate his entire mind on the method of doing it.

Now it may be laid down as a general principle, applicable to all commands consisting of three parts, or which should consist of three parts, that the first part should tell what is to be done and the second how to do it. If this principle were followed in our Drill Regulations, the commands would be more easily and quickly comprehended by the subordinate officers, and be more easily remembered by the regimental or squadron commander, for he would not then have to burden his mind with remembering in each case which part of the command should be uttered first. If he wished to throw his command into lines of fours he would not have to hesitate and try to remember whether he should say, "I. Line of fours, 2. On (such) troop," or, 1. "On (such) troop, 2. Line of fours." He would begin with "Line of fours" in all cases, thus telling first what was to be done, and follow it with, "On (such) troop," thus telling secondly the method of doing it.

Again, in our Cavalry Drill Regulations the number of commands applicable to a single movement seem to be regulated in many cases by no system whatever. Take for instance, the commands, 1. Mass to the right, 2. MARCH. (636), and the commands 1. Column of platoons, 2. First troop, 3. Forward, 4. Column right, 5. MARCH. (661). In the first example we have two commands, the preparatory command and the command of execution. In this case the preparatory command not only tells us what to do, but how to do it. In the second example we have five commands, four preparatory commands and one command of execution. In this case the first command tells us what to do, and the next three commands how to do it. In other words, it takes but one command to tell the whole story in one case and three commands to tell half the story in the other case.

Compare also, 1. Column of fours on first troop, 2. MARCH. (637) with 1. Column of platoons, 2. First troop, 3. Forward, 4. MARCH. (661). Here we find in the first example two commands and in the second four, although both movements are similarly executed.

Properly written these commands would be as follows:

- (1) 1. Mass, 2. To the right, 3. MARCH. (See 636.)
- (2) 1. Column of platoons, 2. First troop column right, 3. MARCH. (See 661.)
- (3) 1. Column of fours, 2. First troop forward, 3. MARCH. (See 637.)
- (4) 1. Column of platoons, 2. First troop forward. 3. MARCH. (See 661.)

In the second of these four examples the "forward" is omitted after "first troop" because it is superfluous and entirely unnecessary. Even in the troop drill the "forward" is not at all necessary, for it is always included in the "column right." Indeed "column right" from a halt is a better command than "forward column right" because it is briefer and just as expressive.

Applying the principle here set forth, we find that the correct forms of the commands mentioned in this article would be as follows:

- 1. As skirmishers, 2. On (such) troop, 3. MARCH. (See 684).
 - 1. Assemble, 2. On (such) troop, 3. MARCH. (See 691).
 - 1. Assemble, 2. By platoens, 3. MARCH. (See 565).
 - 1. Assemble, 2. By troops, 3. MARCH. (See 692).
 - 1. Assemble, 2. On (such) troop, 3. MARCH. (See 691)
- Column of platoons, 2. First (or Fourth) troop forward,
 MARCH. (See 661).
- 1. Column of fours, 2. First (or Fourth) troop forward, 3. MARCH. (See 637).
- 1. Column of platoons, 2. First (or Fourth) troop column right) or left, 3. MARCH. (See 661).
- 1. Column of fours, 2. First (or Fourth) troop column right (or left), 3. MARCH. (See 637).
- 1. Column of platoons, 2. First (or Fourth), troop first (or third) squadron, forward, 3. MARCH. (See 798).
- 1. Column of fours, 2. First (or Fourth) troop, first (or third) squadron forward, 3. MARCH. (See 784).
- 1. Line of fours, 2. On (such) troop (such) squadron, 3. MARCH. (787).
 - 1. Line of fours, 2. On (such) troop, 3. MARCH. (See 629).

1. Line of platoon columns, 2. To the right (or left, 3. MARCH. (See 654).

1. Line of platoon columns, 2. On the right (or left),

3. MARCH. (See 655).

1. Line of platoon columns, 2. Right (or left) front, 3. MARCH. (See 656).

1. Mass, 2. To the right (or left) 3. MARCH. (See 636).

1. Mass, 2. On the right (or left) 3. MARCH. (See 634).

1. Mass, 2. Right (or left) front, 3. MARCH. (See 631).

1. Line of fours, 2. On the right (or left), 3. MARCH. (See 635).

1. Platoon columns of fours, 2. On the right (or left), 3. MARCH. (See 635),

1. Echelon, 2. On first (or such) troop, 3. MARCH. (See 668, 666 and 516).

1. Close intervals, 2. On second (or such) troop, 3. MARCH. (See 659).

1. Extend intervals, 2. On second (or such) troop, 3. MARCH. (See 659).

It may well be noted here that only two of the twentyfour corrected commands in the above list stand exactly as they are written in the "Cavalry Drill Regulations."

It may also be noted that in such commands as, 1. Mass. 2. To the right, 3. MARCH, and, 1. Mass, 2. On the right, 3. MARCH, there would be little or no probability of mistaking the "To" for "On," or the reverse, as there would be if the commands were written, 1. Mass to the right, 2. MARCH, and, 1. Mass on the right, 2. MARCH, for the reason that the squadron commander would most naturally pause after uttering the first command, "Mass," and to most naturally emphasize the "To" or "On" at the beginning of the second command, "To the right" or "On the right."

A number of other just criticisms could easily be made on our "Cavalry Drill Regulations," but it is believed that they would all be of small moment compared to the great fault herein pointed out.

HOW MAY THE EFFECTIVENESS OF THE ENLISTED MAN BE INCREASED?

BY CAPTAIN HARRY O. WILLIARD, FIFTH CAVALRY.

THERE can be but little doubt but that the importance of using every effort to increase the effectiveness of our enlisted personnel is a question which claims the attention of all the earnest officers of the military service, and has in the past, as it will in the future, create animated discussion as to the best methods by which this result may be attained.

There is some divergence in the opinions entertained as to the means of accomplishing the end in view, whereas the successful reconcilement and adoption of all suggestions that is best calculated to bring about the desired object is the aim of everybody, it matters not what minor differences of opinion may exist as to the most expedient manner of accomplishment.

It may be taken as an assumed fact that in a regular army the size of ours to the population—a maximum in time of peace of 100,000 men to an estimated 100,000,000 inhabitants—that each man should be an adept in all lines of his profession from the latest recruit to the commanding general—a picked man in every sense of the word in order to reach and maintain that degree of excellence that is essential to secure when opportunity offers the best results obtainable from such a comparatively small armed force.

It is of the greatest importance that each man may be instructed and rendered proficient in his profession to the highest possible degree in every particular, provided that this army is to be converted into the most efficient fighting machine in the world—for nothing less than this goal should be the pinnacle of attainment which every military student must incessantly strive for, and to reach which no stone should be left unturned.

It is apparent that the brunt of the attack in the case of an invasion by a hostile foreign foe must be borne by our regular

armed forces; equally is it true that to it the nation looks for initial success in the event of a conflict being inaugurated by an invasion with our own forces of a foreign land.

That victory may crown the operations of the regular armed forces, it presumes that our fighting machine must possess in every detail the nicety of perfection and all measures that will conduce to this end should be carefully considered, and, if deemed feasible, practicable and beneficial, adopted in times of peace.

In our present military organization relating to enlisted men, there exist defects obvious to any officer of experience and observation, which are perfectly susceptible of remedy or of complete elimination; it is therefore highly desirable to adopt such new measures as would remedy or eliminate some of the present objectionable features of our military system, since this course would result in betterment to the army at large, to the government and increased effectiveness in the enlisted man must be a natural consequence.

A summary of the defects of the system noted, together with the suggested remedies proposed for adoption, by means of which it is believed a great improvement would result, will be presented for consideration and discussion in the following order:

- 1. Change in the enlistment period.
- 2. Elimination of "double time" and shortening of time in which to retire.
 - 3. Marksmanship.
- 4. Detention and re-enlistment of experienced non-commissioned officers.
 - 5. Abatement of avoidable diseases amongst enlisted men.
 - 6. Establishment of an Army Service Corps.
 - 7. Other proposed measures.

One of the serious defects now existing in the army is fairly traceable to the existing three year enlistment period, and a return to the former term of enlistment of five years would prove most beneficial to the service in many respects. In the first place, it is thought that just as many young men would enlist for a period of five as for three years—at least,

if not as many, then more energetic recruiting would result in obtaining all the men that were necessary; at present recruits are retained at depots for from six months to a year before they are despatched to their organizations; upon arrival at posts, they must (in the cavalry) be carefully trained in the rudiments of the mounted soldier, which requires from six weeks to two months' time; after this they are taken up for duty with their troops; they are then further drilled, instructed and trained to perfect them, with the result that by the time they enter the last year of their enlistment period, they have become fairly well conversant with the duties of the cavalryman, and the government-after great expense and time spent upon them-has the benefit of their knowledge and service for about a year; after this, the majority of these men take their discharge and disappear, whereupon the same old routine must be followed with other recruits.

Suppose that the enlistment period were five instead of three years, the government would be deriving the benefit of these men's training about the time that they are now discharged, and for two years thereafter; this would be a much more equitable return for the money that has been invested in and expended upon them than at present. Moreover, instead of having a new set of green men constantly in organizations, and a continual school of primary instruction always in progress, there would result a much better body of trained men, who having fully grasped and been taught all the rudimentary principles of the soldier, could receive in the last years of their enlistment period more comprehensive inculcation in the various roles of the cavalrymen, which it is now an utter impossibility, for lack of time, to impart to them.

Such a course, carefuly pursued and carried to completion, would inevitably result in a far more efficient, better trained force than the one now in existence. Besides, men who have served for five years with an organization in which they have been well treated and have formed many pleasant associations and friendships, are far more liable to acquire a taste for soldiering and apt to re-enlist in their old troops, than is now the almost universal practice of taking their discharges and going elsewhere to re-enlist, if, in fact, they ever do rejoin the army.

There is another potent factor which is influential in causing men to forsake their old organizations, and this is due to the "double time" given for service beyond the continental limits of the United States, or as it is commonly called, "foreign service." No doubt the intention of the government in instituting this feature was for the betterment of the condition of the individual soldier, as well as to recompense him for severe service in tropical lands, or in countries where he was more or less isolated. There can be no gainsaving the fact that its effect on the other hand has been pernicious, so far as the interests of the government itself and the service is concerned. since it leads to a destruction of that esprit de corps which to a marked degree formerly obtained as to a man's troop and regiment: there is a resultant deterioration in the benefit that the government receives from such service—the troop or regiment no longer appeals to the man-with him it becomes simply a question of serving in lands where he may "get in his double time" in any organization that may be serving there.

In consequence men are continually transferring from one organization to another so as to accomplish this end. It is believed that a far better method would be to abolish altogether the double time feature in tropical lands or beyond the continental limits of the United States proper; in lieu thereof the period in which to retire might well be shortened to twenty years instead of thirty, the incentive then would be taken away to leave one's old organization in self-interest. Officers are not given the benefit of double time towards retirement, when serving beyond the continental limits of the United States,—and so far as enlisted men are concerned, this feature could be well eliminated so as to place them on the same status, especially if the number of years in which to retire were shortened to twenty instead of thirty years, without any material damage to the interests of the enlisted men.

Such men when retired after twenty years' service could be transferred to a Reserve Corps of Veterans, wherein their services might be required in case of necessity until they had served in the corps for a period of ten years, after which they should be completely exempt from further military service except in so far as they might volunteer in time of war or great need.

The next question to be considered is that of marksmanship. It must be perfectly evident that the prime requisite of an effective soldier in time of war above every other consideration must be his ability as a marksman. The fundamental principles in the firing regulations state that in action "rifle fire must always be the most important factor, and by it will the results of battles be most frequently decided." Moreover, that marksmanship is paramount to every other consideration is shown by the next quotation from this same authority: "As the effect of rifle fire depends upon the number of hits made, not upon the number of shots fired, it follows that troops untrained in fire discipline, fire direction and fire control, and who can not hit what they shoot at, are of little value on the field of battle." In other words, the marksman on the battlefield will hereafter prove the most important factor with his rifle, and men not marksmen or poor marksmen will be practically useless as soldiers,-such has been the record of history in the past,--such will be all the more the case in future conflicts, owing to improved arms and ammunition now in use and the long range of weapons. To the deadly accuracy of the American marksman in the wars of the past, more than to any other one qualification, may well be attributed the very existence of the Republic and its ultimate success in all foreign wars. It was the marksmanship of the American minute man that almost proved disastrous to the entire British army at Bunker Hill; it was the steadiness of the American rifleman and his deadly aim that enabled General Jackson at the Battle of New Orleans with 6.000 raw and untrained troops to meet and defeat 12.000 Veterans of the Peninsular War,-the best soldiers of the British army,—with the unparalleled mortality on the British side of 700 killed and 1,400 wounded, whereas the American loss was the insignificant number of 8 killed and 13 wounded. A more recent instance of the deadliness of well directed fire in our own history is to be found in the destruction of the entire Spanish fleet under Admiral Cervera off the coast of Cuba by our own fleet without any loss whatever, this during the recent Spanish War. Similar instances in our own wars as well as those of

other nations may be quoted to prove that well aimed fire is the most potent factor in deciding all battles. It may therefore be safely assumed that there is no duty more important than in the development of the soldier into a fine marksman; it may be granted equally true that where, after fair trial and careful instruction, a man fails to reach a certain fixed standard in marksmanship, that so far as his shooting ability is concerned, his value as a soldier is nil and that there should be some way devised whereby the government may dispense further with his services in order that a new man may occupy his place who may develop into a fair marksman, thereby repaying the government to a small degree for the amount of money expended in furnishing ammunition and apparatus for target practice, and giving the additional assurance that in case of war the country will receive a good account of his service rendered in the shape of effective execution upon the enemy with his rifle.

It will be found to be the experience that there are a number of men, possibly 20 to 25 per cent. per troop, who, notwithstanding all the instruction, practice and time spent upon them each year, finish the regular course of target firing annually with little or no visible sign of improvement, making third class or at the best just over the line in second class.

When consideration is given to the fact that none of these men fire at distances greater than 600 yards, and that they make less than 40 per cent in hits on targets at that maximum distance under the conditions of rifle firing that exist on the range, it can be readily imagined that the effectiveness of such men's fire in the heat of battle and when working under great excitement would be next to nothing, therefore the damage inflicted by them upon the enemy might just as well be totally disregarded, for it then resolves itself into a case of the number of shots fired and not of the number of hits made, which, we have already seen, is stated upon the authority of our firing regulations to be of little or no value.

True, some of these poorer shots improve as time passes, but the greater portion of them never reach that point which is commensurate with the time and expense devoted to them, and which might more profitably be expended in making another man a better shot than in endeavoring to improve some of these

hopeless ones. Many of these men are sober, industrious and thoroughly good in all other respects, but they are simply impossible so far as shooting, which is the one qualification in which the valuable soldier should excel.

What is the remedy? It is believed that if after a year's careful instruction and practice it becomes evident that a soldier is not able to habitually make at least 50 per cent of hits in the marksman's course that it may be assumed that his shooting ability is below the standard of what would be required to be effective in battle, for which he receives his training, and that the best interests of the government would be subserved if such a man were honorably discharged for the convenience of the government, thus enabling another man to fill this man's place who may be developed into a good shot. Or such men, if good soldiers in all other respects, might be transferred to other branches of the service, where individual excellence in marksmanship is not a prime requisite and qualification; such men might render excellent service in the Coast Artillery, where all firing becomes a matter of science and mathematics rather than depending upon individual ability and effort. Or in case of the establishment of an Army Service Corps, many of these men would render an excellent account of themselves in some capacity as teamsters, laborers, mechanics, etc., hereinafter provided for. In any event, it appears manifest that their services should be dispensed with in the line; that their retention after fair trial and expense has shown their poor qualification as riflemen is not in the interests of the public service.

Whatever method might be adopted for removing them from the line, they should be eliminated without delay, and new men enlisted to take their places for the reasons heretofore given. Were this course decided upon and executed, it could not fail to result in a much higher standard of marksmanship in the army and the perfecting and development of better shots, which time must now be employed in the endeavor to improve poor shots.

That the effectiveness of the line as a fighting force would receive a tremendous impetus through the adoption of this method, and that an army of marksmen would result as a natural consequence can scarcely be questioned.

Another undesirable characteristic of the present military system is the inability to retain our old and experienced non-commissioned officers in our organizations. With a complement of old and thoroughly efficient non-commissioned officers in a troop, it is a relatively easy proposition to train men and to instruct them in all the requirements of discipline and their various duties. It would be far better to have an entire troop of recruits to be initiated into their different duties, provided the non-commissioned officers were thoroughly competent and efficient, than if the troops consisted of part old and new men to be instructed if in the latter case the non-commissioned officers, to be the instructors, were men of little service or experience and in consequence thereof of mediocre ability.

One of the most prolific sources for producing in a short space of time good soldiers out of otherwise raw material will be found to consist in having a body of non-commissioned officers proficient and well conversant with their respective duties in the troop. These men will be competent to instruct others as well as to impress recruits with their ownsoldierly qualities. The ability and good example of excellent non-commissioned officers must necessarily exercise a powerful influence upon the minds of new recruits in the proper direction, which is certain to have a directly opposite effect if these same non-commissioned officers are inefficient, inexperienced or indifferent.

Where recruits have before their eyes constantly an object lesson of model soldiers, who have thoroughly grasped all the intricacies of their duties, men who are soldierly in carriage and in deportment, good shots, with long careers in the military service and of excellent character, it is certain that these same recruits must of necessity be impressed and almost unconsciously moulded into the same type of soldiers. Many of these recruits will gradually acquire under such able instruction and example many of the same characteristics which have been influential in rendering these same non-commissioned officers themselves so valuable.

The task of training new recruits in the military service with energetic officers in command of them and a body of capable and efficient non-commissioned officers for their immediate instructors will be so facilitated that in a relatively short

time these same men under instruction will be found to be very good soldiers so far as relates to discipline and organization. All the instruction and the impressions which these recruits receive may be assumed to be proper ones, and with careful attention to duty, they will acquire under these particularly favorable conditions ideas of discipline and training which it might require months for them to obtain under inferior instructors. and even then their first ideas would not have received the same groundwork that would be the case under the above assumed conditions. It is not difficult to decide which class of men could be expected to give the best account of themselves in action, whether those whose early military training has been received from officers and non-commissioned officers, competent in all respects, or those who are indifferently instructed by noncommissioned officers, more or less ignorant, of little or no experience or service, incapable and inefficient in the exact sense of these words.

It must be self-evident that non-commissioned officers, old in service and proficient in their various duties as soldiers, must ever prove an invaluable asset to an organization, from the possession of which results of incalculable value may be expected; their continued presence in an organization is bound to exert a powerful force and will be displayed in the better morale of the privates of the troop.

The question is, how may such non-commissioned officers be retained with organizations so that this high standard may not only be reached but indefinitely maintained? It is a well known fact that very few of the old type of sergeants and corporals are to be found in the army to-day as was formerly the case,—men who used to make soldiering a lifetime occupation. It is no uncommon thing nowadays to find corporals, yes, and even sergeants, serving in their first enlistment period, which in times bygone would have been unparalleled and unheard of:

There has been a marked increase in the pay of non-commissioned officers over that which they formerly received. This is certainly a step in the right direction, but there still does not exist that rate of pay which it is natural to expect when the services of experienced and tried men, such as the non-commissioned officers under discussion, are to be obtained and--what is superlatively important--retained in organizations.

Under the existing law privates who re-enlist within three months of the time of their discharge are given a bounty by the government in the shape of a bonus of three months' pay for re-enlisting, but the same rule does not obtain for non-commissioned officers,-they receive no bounty, no bonus,-nothing except that they may be continued upon re-enlistment in the grades which they hold at discharge. If the bonus to privates is an incentive for them to re-enlist and the government thereby retains the services of trained soldiers in preference to green and raw recruits,-if such a policy is best for the interests of the public service, then further application of the system and the law in extending to non-commissioned officers who re-enlist in their same organizations within three months after discharge would be all the better in securing the continued service of these men in an organization who are pre-eminently more valuable than the privates. Such a law would produce excellent results, and many more of these non-commissioned officers would reenlist when discharged than is now the case. The law should be amended so as to grant three months' bonus of pay in their grades to non-commissioned officers upon discharge who re-enlist in the organizations with which they have been serving. As a result, many of these valuable men will be found year by year in the same organization, with much added benefit to the public service on account of the continued presence of these experienced men, to say nothing of the better discipline and esprit de corps that will be aroused and retained therein indefinitely.

The pay of non-commissioned officers should be increased commensurate with their positions and such as the increased value of their knowledge and continued presence in a troop and resulting benefits to the same might naturally expect. There should be a marked distinction between the pay of a private and of the lowest grade of non-commissioned officers, provided the most intelligent, experienced and desirable class of men is to be constantly kept with an organization. The additional cost of the maintenance of the army would be relatively small when compared to the vast benefits that would accrue to the government in possessing throughout the army a high standard of

non-commissioned officers, who would grow better year by year as their service increased, and who would far more than return the insignificant difference of pay involved by rendering material assistance in raising the entire force of enlisted men to a higher plane of discipline and effectiveness. The advisability of adopting other measures, such as separate messes for noncommissioned officers, establishing and maintaining noncommissioned officers' clubs, higher and more complete instruction and education for non-commissioned officers, etc., would no doubt tend to raise the standard of the non-commissioned officers and incidentally the effectiveness of the enlisted man himself, but one of the main defects that should be remedied at once is to provide better pay for the non-commissioned officer. so as to make it a financial object for them to re-enlist in their old organizations. It is not within the province of this essay to branch out further in the consideration of this subject, nor is there time or space to do so .- sufficient to state that all measures which will accomplish the end of keeping constantly in a troop a body of experienced and capable non-commissioned officers, who will remain with the organization throughout their military service, should receive the heartiest support of all the legislators and military students.

There is a question which concerns the effectiveness of the enlisted personnel to a marked degree, and this is the matter of avoidable diseases prevalent in the army. These diseases seem to be increasing from year to year in alarming proportions. Reference is had to the existence of venereal diseases amongst enlisted men. It is by no means an infrequent occurrence to find four or five men in each organization constantly in the hospital for months at a time with some venereal trouble resulting in these men receiving absolutely no military instruction during this period owing to their own misconduct, to say nothing of their share of the labor in the troop being performed by their comrades.

Considering the service alone, these men might as well not be in it for all the benefit or service they render during this sickness, often running into months. All of this time they are charges upon the government while incidentally they receive full pay for which they return nothing in kind or otherwise. Sometimes good men may be unfortunate in contracting venereal diseases, and after one experience seldom do so again or at such long intervals as not to seriously affect their value as soldiers. In other cases men will recover from one attack of this nature only to immediately incur another one, or the disease may assume such chronic form that the greater part of these men's service is spent in the hospital or with their names upon the sick book.

Even presuming that these men were otherwise good soldiers, of what value are they to the service if they are seldom available for duty and instruction? The time that should be employed in perfecting them as soldiers is used in endeavoring to cure them of diseases that have been contracted by them, not in the line of duty, but through their own misconduct and the unbridled exercise of passion and licentiousness.

When compared with numbers of other excellent soldiers who are always present for duty, except when sick from disease contracted in line of duty,—men who attend strictly to their business and are available at all times for instruction and training,—it does not require an astute mind to determine which class of men best serve the government or which are the most valuable and effective in the ranks. This condition, in no ways exaggerated, must be met with constantly in actual service, the only departure or variation that deserves notice being the case where more men are temporarily disabled and absent sick from their organizations than the number given owing to their own utter disregard of the care of their health.

What should be done to change this status and to rectify it?

There is nothing that the average soldier so dislikes as the loss of his pay, whether it be from forfeiture on account of sentence of court-martial or for other causes, such as stoppages, etc. It would therefore not only be feasible but the natural and logical conclusion that while men are sick in hospital or carried on sick report with venereal diseases that during the continuance and existence of the said diseases, their pay should be stopped against them since they give nothing in return for this pay, they perform no labor or duty,—in fact they are an additional expense to the authorities and the army since they

must have medical care and medicines furnished them and hospital attendance as well while the disease is in progress; consequently that the pay of such men should be stopped does not seem to be an unreasonable exaction and the only hardship that would be worked upon any one would be upon the man himself at fault; that the government should continue to reimburse men for services never rendered by them while sick through their own misconduct is preposterous upon the face of it, and is placing a premium upon the contraction of such diseases whereas there should be a penalty imposed instead.

Under present conditions, there is no distinction between the soldier of good habits and of exemplary conduct and the immoral soldier indifferent to his own health or the interests of the government, so far as pay is involved; one may be faithful in the performance of duty throughout the month, the other constantly sick with venereal diseases and unavailable for duty on that account during same period, but each is paid the same sum of money, provided their years of service are equal.

With the rule established that their pay will be stopped during the prevalence of such avoidable disease, a large diminution of such cases is bound to occur. In the case of those men who are so careless of their own health and welfare as to habitually contract this variety of disease at frequent intervals, a more drastic course should be adopted; they should be discharged without honor and without expense to the government, since their condition has arisen and is being continued through their own vicious habits and lewdness, and such service can in no sense be deemed honorable, nor can the retention of such men be desirable or beneficial; the government had far better dispense with such men altogether with a view to replacing them with other men of more moral or at least more careful habits.

For the purpose of detection of this kind of disease, there should be frequent sanitary inspections at posts, which all men (unless married and having their wives with them) should be required to attend,—this in order that the existence of venereal disease can not be concealed by men cognizant of the penalties that might be imposed.

All men should be fully acquainted with and encouraged to take all precautionary measures and disinfectants to prevent venereal diseases, and for this purpose should be rendered every assistance by the medical authorities that may be available, without any disgrace or penalty being attached thereto; it is only where the disease has been contracted, it matters not the reason so long as it is the result of misconduct, that the above course should be followed. That the result would be beneficial upon the service at large may be assumed without argument, and increased individual effectiveness must necessarily follow.

There is another phase of this subject which has already received the support and recommendation of the military authorities many times previously, and measures have been introduced in a number of congresses the purpose of which was to establish in the service an Army Service Corps, but which have so far failed of enactment into law.

Often times recruits are induced to join the army through wrong representation of recruiting sergeants and other members of a recruiting party,—many attractive pictures are depicted to them of delightful service in the tropics,—the tales of travel and adventure appeal to some, to others the fine appearance in full dress uniforms which are always displayed at recruiting stations in the shape of highly colored posters; whatever may be the inducement, it is certain that the brightest possible side of the soldier's life is described to all applicants. seldom, if ever, are they acquainted with the days of almost endless fatigue that must be performed by them with pick and shovel, nor are they informed about cutting grass, or hauling stone or running saw mills or rock crushers or sprinkling lawns or countless other similar tasks that the soldier is called upon to perform in never ending fatigue; again, mechanics, carpenters, painters, clerks, engineers and men of innumerable other trades and occupations frequently to escape leading this selfsame life, inspired by the glamour of the soldier's career, enlist in the army,-of course giving their regular occupations upon demand by the recruiting sergeant, -only to discover upon arriving at their posts in a short time that their dream of soldier life has been a delusion and a snare, for soon they find them-

selves once more at work at their old trades, as carpenters, painters, mechanics, laborers, etc., on extra or special duty, for which skilled labor they are remunerated as highly as 50c per day in addition to their regular pay; these men enlisted to become soldiers and many times to escape their regular occupation, which has become distasteful or monotonous to them,they actually find that they learn little of the real life of the soldier, they are in fact once more back at the very occupation they sought to avoid by entering the army, only at a wage possibly one-quarter what they would receive for similar work in civil life. Naturally, many men become disgusted with their impressions of the soldier's life, for their own existence is that of continual labor upon tasks utterly at variance with the vocation of the soldier and entirely different from what they supposed or were led to believe would be the case. Is it then surprising if many men change their views in the course of their service and never re-enlist at the expiration of their terms, if they do not desert before their enlistment period has expired? Still, nothing can be done in the military service under present conditions to alleviate this class of necessary work,the seat of the trouble is to be found in the system in vogue,

There is always a vast amount of labor that must of necessity be performed in each garrison which is as diversified as it is possible to conceive; there seems to be an incessant amount of manual and skilled labor that must be carried on,-the services of mechanics, clerks, carpenters and artisans of different trades must be had for the public benefit and since no other source of supply is available or furnished by the government, the contingency is met by requisitioning the services from the ranks of the enlisted men and assuredly those men are selected for the positions who are known to have possessed the necessary knowledge and training before their entry into the army, -if a good carpenter is desired or the services of a mechanic, then the descriptive lists are consulted and Brown, occupation, carpenter, and Jones, occupation, stationary engineer, are promptly detailed in the interests of the public service. It makes absolutely no difference whether Prown or Jones entered the army through distaste for their respective trades, or because they wished to become soldiers; so long as the services of a

carpenter or a stationary engineer are required, they must occupy those positions, irrespective of the desires of the men themselves, and the better workmen they may be at their regular trades, the longer are they apt to be detailed on extra or special duty and the less are the chances that they will ever acquire the fundamentals of the soldier,—possibly they may be sent out to drill at infrequent intervals or railroaded through the essentials of target practice with the resultant effect that they only delay the instruction of better trained men by ignorance arising through no fault of their own but owing to the fact that they possess technical knowledge obtained in civil life which many of their comrades—(much to their own benefit so far as acquiring knowledge of the soldier's duties is concerned) —do not possess: in target practice, there invariably seems to be a wild rush to get these men back to their "legitimate work" and in consequence what ideas they obtain in this important part of the soldier's education in the short time allotted and available for the purpose, is rapidly jammed into them, and the classification attained by such men in the regular season,—as a general rule poor,—is ample proof that it has not been worth the time and money spent upon them in this highly unsatisfactory method of instruction.

The system is radically wrong, for where a man enlists to become a soldier, he should not be expected to master this occupation and be a jack of all trades in addition,—one thing or the other must inevitably suffer in consequence, and,—since the work of garrisons is a routine that must necessarily be carried out day by day,—the result is that the soldier's duty and instruction is subordinated and displaced by other kinds of work entirely foreign to that of the soldier. A soldier should never be required to perform any class of labor that is at variance with or not the logical consequence of his own vocation: the hours and days that are now passed in manual labor or work of a civil technical character should be totally eliminated, performed by others particularly enrolled for the purpose, while the soldier in place thereof should be constantly instructed and trained in his legitimate and proper duties and more thoroughly perfected; that ample subjects might be discovered without undue effort to which the time now otherwise

spent might be profitably devoted can be assumed without comment; the result would be that the soldier's knowledge and ability would be intensified to a vast degree and with marked improvement. There being at all times, say 90 per cent men present for duty and available for drills and instruction, the knowledge imparted would be universal and generally beneficial to the entire organization, instead of the existing case where possibly not 50 per cent of the men are constantly available for the enlisted man's legitimate training as a soldier.

The effect upon the entire enlisted force must be manifestly obvious,—if this class of labor was not required of the soldier, if his duties were limited to and his time were devoted solely to those measures whose only object was to perfect enlisted men as soldiers, the standard of fighting efficiency of the army would be greatly increased as a natural sequence of such a course.

To accomplish and effectuate this idea, it will be necessary to reform the entire present system; while this would result in additional expense to the Nation, the increased effectiveness of its armed forces would far more than recompense the government for all the added cost involved.

By suitable legislation, an Army Service Corps could be easily established in which men could be regularly enlisted as laborers, clerks, mechanics, teamsters, packers and artisans of every description whose services would be required for all kinds of work dissimilar to or not intimately associated with the soldier's work itself, at wages proportioned to the class of labor performed; these men being regularly enlisted would be subject to all the rules and articles of war and discipline as well the same as other soldiers, a vast improvement over the existing status of affairs, where many civilians are employed upon these duties over whom no control or disciplinary measures may be employed beyond a discharge from the service, and in the case of civil service employees, this involves such a roundabout use of "red tape" that it is often impracticable.

By the inauguration of such a system, all duties of a non-military or civil character would gradually be eliminated from the soldier's life and the same performed by the Army Service Corps as the latter were gradually increased, for it would be

impossible to at once initiate a corps adequate to execute all the necessary amount of work, this for the reason that our legislators would by degrees have to be convinced of the expediency and the benefits to the army at large of such a corps before they would willingly grant the numbers sufficient to carry on all the necessary work at garrisons. Congress could, however, in the course of time be brought to a gradual realization of the efficiency of the system, and thereby induced to constantly increase the numbers of the corps until it would be possible to have all forms of work, not strictly the soldier's own, carried on at posts and in the field as well, by this corps of men, specially fitted for their respective duties; the services of all soldiers of the line thus being no longer required for this class of unmilitary work, they could be dispensed with from time to time, and could then be returned permanently to their respective organizations and the entire time devoted by their officers to familiarizing all of their men in the purely technical duties of the line soldier, much to the contentment of the individuals and the improvement in the knowledge possessed by each man.

A detachment sufficiently large enough to accommodate the needs of a force both in garrison and in the field could be assigned to each post under such regulations as the Chief of the Corps might determine, with the approval of the War Department, as being self-sufficient and expedient, to the infinite betterment and improvement of all classes of work required. As the system were more carefully developed, it might transpire that it would be best for the interests of the service or of the men themselves to transfer some men from the line to the service corps or vice versa; men found to be unsuited for the purposes of the line after trial, but otherwise possessing the necessary qualifications for the performance of duties in the service corps could advantageously be transferred to it; on the other hand, those who it developed were better adapted to the duties of the line soldier could be profitably transferred to that arm of the service for which they were best suited, in each case the efficiency resulting from the adoption of the method could well be conceived to be far in excess of that in existence under the present regime.

It can be imagined that such a corps of enlisted specialists, entitled under the law to all the benefits and emoluments of the enlisted man, would render of themselves a far better account than a class of men who as civilians are simply a throng of camp followers,—that, being subject to the influences of discipline and military control not possible under other conditions, marked excellency must necessarily follow the working of such an organization; moreover, these men themselves being soldiers, would, in time of war, be inspired to perform deeds of heroism and valor upon the field of battle when occasion furnished the opportunity, which ordinarily appeals in no sense to the average civilian in similar situations.

The niceties of the system and the benefits that might accrue are almost endless in number, and a complete discussion of them all would involve in itself a most comprehensive article for which there is neither the time nor space to consider in this discussion.

Sufficient to state that the manifold advantages that would result throughout the entire army by the adoption and institution of such a corps must be apparent without further amplification of the subject,—it must also be admitted as an incontrovertible fact that the standard of enlisted efficiency would be so elevated as to make the adoption of and the establishment of the proposed corps imperative at the earliest practicable date.

There are countless other subjects that might appropriately receive consideration in a discussion of this character but which can not be dealt with in an essay as limited in scope as this one must be; a superficial glance or reference will be devoted to such measures as have occurred to mind, this sufficing to fix the attention upon them without extensive particularization.

Without any degree of improvement in effectiveness being possible, certain requisites must be assumed as existing throughout all organizations, as a matter of course; such, for example, as enthusiasm in the soldier's vocation, contentment, satisfaction with the life, maintenance of a thoroughly good mess, for the great Napoleon himself has most aptly remarked that "An army moves upon its belly"; competent, efficient and energetic officers, who treat all men squarely; who, being themselves reasonable men and enforcing proper discipline, must neverthe-

less, not expect nor require the same line of conduct of their men that they would from a class of Sunday school scholars; soldiers must have ample facilities for their diversion and amusement, also reasonable time in which to divert themselves without infringing upon hours devoted to their proper instruction.

The measures to which it was stated above reference would be had, and which are some of the other measures that would undoubtedly assist in obtaining increased effectiveness in the case of the enlisted man, if adopted, may be briefly enumerated as follows:-the enactment of the Extra Officers' Bill, which would result in a full or nearly full complement of officers being present at all times with each organization; the re-establishment of the Canteen feature of the Post Exchange, where all men could satisfy their desires for beer and light wines, under proper regulations and official supervision, resulting in a marked decrease in the prevalent amount of drunkenness in the army and the number of summary court cases; in addition, the profits of this institution could be employed in the betterment of the men's mess and improvement of their condition in ways not now provided for by the government; the enforcement of more respect by the government for its uniform throughout the land, particularly in the great cities, where frequently theaters and other public institutions refuse admittance to soldiers when in uniform; and with a view to enforcing proper respect for its uniform, the government should purchase at a reasonable figure the uniforms of all men about to be discharged, who do not intend to re-enlist, supplying them in lieu thereof suitable civilian clothing.—the government should also relentlessly prosecute thereafter all persons having or wearing any article of uniform, under the statute already in force (except the organized militia), and upon conviction impose the maximum penalty of the law for its violation. The case of pawn brokers openly displaying articles of the uniform for sale, the practice of disreputable people wearing articles of the uniform and often times bringing disgrace upon it or even the possession of articles of the uniform by people not in the military service would cease; the increased respect for the uniform that would result from the enactment and enforcement of appropriate legislation that would effect the above would become noticeable in a short space of time; there should also be a diminution in the number of summary court cases tried annually, in place thereof forms of labor and extra work specially devised for such cases should be initiated, which, by the way, the soldier should be required to perform in his spare time,—under no circumstances should time devoted to instruction purposes be used for this kind of work.

There should be more publicity upon the subject of desertion and a gradual moulding of the public sentiment, by the enactment of appropriate legislation, into a stern realization of the heinousness of the crime, such for example as the enactment of a law making it a felony and misdemeanor for any one to knowingly harbor, protect or conceal a deserter, or who aids or abers the harboring, protecting or concealing of a deserter at any time, and providing for severe punishment therefor upon conviction; the enactment of a law requiring the communication of immediate information by every one cognizant of or suspicious of the presence of a suspected deserter in the neighborhood, and providing for appropriate and suitable punishment upon conviction for failure of any one to give this timely information to the nearest military or civil authorities. The imposition of more severe penalties and the forfeiture of more rights in the case of deserters should receive attention of the authorities; the institution and enforcement of more rigorous hunting down of deserters should be carefully carried out, so long as people at large are immune from punishment for harboring, concealing and protecting deserters from the army or of failing to give prompt information of their suspected presence in the vicinity to those in authority, just that long will it be impossible to effect any large decrease in the number of yearly desertions from the service, but where by Federal enactments citizens were apt to become criminally liable through doing or through failing to do the things set forth in the law, the number of apprehensions would constantly multiply as the number of desertions would diminish to a large degree; the reward for the apprehension of deserters should be paid to that person through whose efforts the arrest of the deserter was effected, whether that person were an officer of the law or a citizen.

In conclusion it may be stated that the foregoing are measures the adoption of which in whole or in part could not fail to result in a distinct increase in the effectiveness of the enlisted man; they are steps that should be taken towards perfecting the fighting efficiency of the small armed force of the Nation, and which would raise the standard of excellence to that point that it certainly should possess if the Country's future great battles are to be fought and won through its instrumentality.



AN INSTRUCTIVE PRACTICE MARCH.

By EDWARD DAVIS, CAPTAIN THIRTEENTH CAVALRY.

DURING recent years of regular practice marching all of us have observed that there are at least two distinct ways of conducting these marches. One way is to get out on the best road available and plod along that road in dull monotony from breakfast time to camping hour going through the motions of marching in sore and silent harmony with the classical "forty miles a day on beans and hay"—with the forty miles reduced one half. The marching command is restricted entirely in its mental uplift and ginger to the stimulating idea that they "are on the way."

Another method of conducting a practice march is to give the command a mental as well as a physical objective and to so arrange, publish and execute the plan of the march that its "live-wire" element will be felt by every man from front to rear, day in and day out. Where there are neighboring garrisons the 21-day march can be made most instructive by providing for joint maneuvers as a part of the march even though the exercises be of the simplest kind and few in number. Let the command know that it is actually on a man-hunt and that it is in turn being hunted by soldiers who know their business and the ordinary 21-day march is magically transformed. Advance, rear and flank guards, outposts and scouting parties know that they are liable to be seen first and fired upon or captured. A spirit of competition and of organizational pride is sure to be aroused and the execution of every movement will be electrified by a keen desire to outwit and defeat the "enemy."

Such a march could be had, for instance, by directing the bulk of the Fort Leavenworth command to the westward and the Fort Riley command to the eastward, on their 21-day marches. The opportunity is at once presented for typical cavalry screens, wide-fronted outpost lines, cavalry raids, etc., all being operated and controlled by wireless telegraphy, the buzzer, heliograph and other signal facilities. There need be no destructive deployments or marches across ten-thousand-dollar wheat fields or potato patches, as a great deal of valuable instruction can be gained without actual contact of main bodies. Umpires add to the benefit of such exercises, but they are not absolutely essential and a great deal of instructive work can be done without them.

During the recent occupation of Cuba, it was the writer's good fortune to take part in a practice march which ordinarily would have been the dullest of the dull, but which was saved from such a condition by application of the garrison co-operation method and the expenditure of a few blank cartridges. From my notes, made on that occasion, I have drawn the following account of the march as made by the Second Squadron, 11th Cavalry, Battery "F," 3rd Field Artillery and Company "I" Signal Corps:

The detachment was assumed to be a "Brown Raiding Force" and the whole march as far as practicable was made under war conditions built up around the assumptions found in the following memorandum which is quoted. (The speed required of such a raiding force was not attempted in general, but was in some particular instances.)

Detachment United States Troops of Camp Columbia, Cuba. Camp Columbia, Cuba, November 3, 1908.

Memorandum of Instruction.

GENERAL PROBLEM FOR 21-DAY FIELD OPERATION.

General Situation.

Two foreign armies, Brown and Blue respectively, are contesting for control of Cuba, the Brown army having its base near Havana, the Blue army having landed near Cienfuegos. The sea-power of the opposing forces has been temporarily neutralized by conflicts almost totally destructive. The inhabitants of the country are an almost negligible factor in the contest, but, if anything, they are inclined to be more friendly toward the Blues.

The Blue army, advancing toward Havana, has halted to await re-enforcements and is occupying a strongly intrenched position along the road LA UNION-ALACRANES in Matanzas Province. The Blues have practically no mounted force and their operations have been characterized by extreme

deliberation. The Brown commander has a well balanced force of all arms and has energetically prepared for a dashing offense.

Special Situation.

BROWN.

The Brown commander being ready for a general and rapid advance of his whole force, determines to send a raiding column around the Blues' right flank, with a view to diverting the Blues' attention, as well as to destroy or capture any accumulated supplies. He sends this telegram:

Telegram.

Headquarters, Brown Army.

Cerro, 2d November, 1908, 7:30 a. m.

Major General Black,

Commanding First Division, Buena Vista.

In accordance with instructions conveyed to you on Friday, 30th October, you will detach the troops selected by you, viz.: Second Squadron, 11th Cavalry, Battery "F," 3d Field Artillery, and Co. "I," Sig. Corps (Wireless Section), placing the detachment under command of Major H. W. Wheeler, 11th Cavalry, with instructions to march at 7 o'clock morning of 3d November. Give Major Wheeler the confidential information now in your possession and say to him that his detachment will be expected to get well around the Blue right, even as far as Cardenas. The supplies reported as accumulated at Matanzas and Cardenas are undoubtedly intended for the enemy's use. These supplies will be seized and held for our own use. It is reported that Blue detachments already have been sent out to these places to take over and guard the supplies. A few Blue scouts are reported to have been in Guines today, With above exceptions, Blue force still inactive and occupying the line LA UNION-ALACRANES. Instruct Major Wheeler to attack vigorously any Blue detachments he may encounter. Our general advance on the morning of the 6th instant will be Major Wheeler's best defense. If our general advance is temporarily checked, he can easily take safe position on "Pan de Matanzas" or in "Las Piedras de Camarioca." He will keep in communication with these headquarters by wireless telegraph. His movements after conclusion of the raid will be directed from these headquarters, depending upon results.

Transportation and baggage of the detachment will be in strict accordance with memorandum heretofore issued with regard to this movement.

By command of Lieutenant-General White,

BROWN, Major General, Chief of Staff,

Note:—The Brown detachment, consisting of 2d Squadron, 11th Cavalry, Battery "F," 3d Field Artillery, and Co. "I," Signal Corps, will be ready to march from Camp Columbia at 7 o'clock a. m., 3d November, 1908, when the problem will begin.

By order of Major Wheeler.

(Signed) EDWARD DAVIS, 1st Lieut, and Sqdn. Adjt. 11th Cav., Adjutant.

In order to give this problem a more realistic touch, the Commanding Officers at Guines, Matanzas and Cardenas were each sent a copy of the "situations," and were asked to take the part of detachments of the "Blue force" with the suggestion that they attack and annoy our column wherever and whenever practicable. This they did and the entire command was much benefited by thus coming in contact with a tangible opposition. Beginning with the second day of the march, there was always the probability of "running into the enemy." After the two sharp brushes with the "enemy" on the day of our entry into Matanzas, marching eastward, there was not a day when advance and rear guard and flanking forces were not conducted with war time alertness and thoroughness. The maneuver in approaching Cardenas and the seizure of the Rio Canimar Ferry especially were very pretty pieces of work, as will appear more fully in the following pages. (The co-operation of the commanding officers above mentioned was very much appreciated, their response to my suggestion making my own march and, doubtless their own operations vastly more beneficial than any ordinary practice march could possibly be.)

The detachment began its march under the following field order, which is quoted:

DETACHMENT, UNITED STATES TROOPS OF CAMP COLUMBIA, CUBA.

("Brown Raiding Force.")

FIELD ORDERS No. 1.
Troops.

(a) Advance Guard.
Captain Tompkins.
Troop "G," 11th Cavalry.
Det. Co. "I," Sig. Corps.

(b) Main body—in order of march;
 Det. Co. "I," Sig. Corps.
 Troop "H," 11th Cavalry.
 Troop "E," 11th Cavalry.

Troop "F," 11th Cavalry, less 1 plat.

Co. "I," Sig. Corps. Batty. "F," 3d F. A.

Camp Columbia, Cuba. 2d Nov., '08, 11 a. m.

The enemy is reported to be in position along the line LA UNION ALACRANES in Matanzas Province. His scouts are reported to be in Guines now, and larger detachments of his force may be moving toward Matanzas and Cardenas.

Our army will begin a general advance on the 6th inst.

 This "raiding detachment" will march tomorrow, 3d November, to Cuatro Caminos, with a view to reconnoitering toward Guines and La Catalina, preparatory to a rapid march around the enemy's flank.

- (c) Rear Guard. Lieut. Jackson. 1 plat. Troop "F," 11th Cavalry.
- 3. The detachment will march at 7 a. m. in the following order, viz.: (1) Second Squadron, 11th Cavalry; (2) Co. "I," Sig. Corps; (3) Wagon train, Co. "I," Sig. Corps; (4) Battery "F," 3d Field Artillery; (5) Wagon train, Battery "F," 3d F. A.; (6) Wagon train, 2d Squadron, 11th Cavalry. This order will be maintained until the detachment passes outside of our lines at Luyano, when the order of troops in the margin will be assumed—and
 - (a) The advance guard will move out on the road to San Francisco de Paula.
 - (b) The main body will follow the advance guard at about 1,500 yards.
 - (c) The rear guard will follow the main body at distance to be indicated.
- The trains will maintain throughout the day the order of march indicated in paragraph 3.
- The Detachment Commander will be at the head of the column until we reach LUYANO, after passing which point he will be found with the leading element of the main body.
 By order of Major Wheeler.

(Signed) EDWARD DAVIS, 1st Lieut. and Sqdn. Adjt. 11th Cavalry, Adjutant.

Copies to C. O's. Troop "E," "F," "G" and "H," 11th Cavalry, Battery "F," 3d Field Artillery, Co. "I," Signal Corps, and to officers of all organizations and staff.

The field order above quoted represents the order of troops maintained generally throughout the march (advance and rear guard changing daily), the only alteration being to put the battery in front of the signal corps company when contact with the enemy was expected. Other field orders were published as circumstances required, but in most instances the officers of the command were assembled on the evening or morning preceding the particular "problem" to be attempted, and the situations were announced and directions issued verbally, everything being explained by reference to the map.*

^{*}Owing to its size and cost of reproduction, it is impracticable to publish the map accompanying this article although a valuable adjunct to it.

NOVEMBER 3.

The command left Camp Columbia at 7 o'clock a. m. marching to Cuatro Caminos via Havana, Luyano and the Guines calzada. Men, animals and transportation were generally in very fit condition and the road was good. During most of the march a heavy rain poured down and the camp that night was one of the wettest possible. Rather than enjoy the doubtful comfort of attempted sleep on a bed of black mud mixed with water and weeds, most of the men remained up all night sitting around camp fires cracking jokes, telling stories and drying off. By reveille, most of the men were dry and quite ready for the second day's rain.

The Signal Corps company had cut in an instrument on the Cuban Government Telegraph lines, in an effort to secure news of the presidential election in the United States, hoping thus to bring added good cheer into camp. Due to rains, leakage was heavy and messages difficult to handle. However, at 9 p. m. and again at 5 a. m. definite news was received.

NOVEMBER 4.

Our march this day had not far progressed when we were overtaken by a driving rain. Though not as acceptable as sunshine, this rain caused little discomfort. About 10 o'clock the advance scouts learned from some of the inhabitants of the country that a force of infantry-about one company-had been seen in the vicinity that morning. It was thought that this must be a detachment of the "Blue force" (from Guines) and preparations were made to sweep them aside. The advance guard located the "enemy" some 1000 vards in advance-but before dispositions could be made, the lieutenant commanding the "Blue company" withdrew from his excellent position to the calzada. It seems that he had had no opportunity to supply himself with blank cartridges and felt that the problem could scarcely continue longer with any benefit to either side-since his presence had been discovered and, owing to lack of cartridges, he was unable to effect a real simulation of an opposing force. While the first contact with the "Blues" was unsatisfactory to both sides, through lack of a few blank cartridges by which the "enemy" could have indicated his presence

in war fashion, the incident was of value to the command because it roused them to a sense that the "enemy" was at least not entirely mythical.

The remainder of this day passed without incident, the command making camp at La Catalina.

NOVEMBER 5.

This day was spent in camp at La Catalina. An outpost problem was solved, the assumption being that we had made camp at Catalina after driving an irregular force of the "enemy" toward the east. Cavalry patrols and outposts were maintained while the battery was used to cover the important approaches to our camp.

That we were getting in touch with the "enemy" became apparent late in the day, when one of our officers who had gone to the railroad station on business intercepted a telegram sent to the local station master by a station master at a small town between Catalina and Matanzas. This telegram inquired pointedly as to whether we would march the next day, as to our numbers, etc. Our "information division" dissected this telegram and its relevant circumstances, made certain deductions as to the designs and the identity of its originators and then filled the confiding station master with "fake" information and strict injunctions "not to tell anybody." On our part, we learned from the intercepted telegram that our movements were being watched by a body of troops operating near Empalme, a small railroad town about 12 miles southwest of Matanzas. Later that night two more telegrams of the same sort were landed in the net of the information division. They confirmed our suspicions that we were being watched by the "enemy" and that his rendezvous was doubtless somewhere in the triangle Empalme-Aguacate-Finca Ingles. The station master was again "stuffed" with bogus information as to our movements, in the confident belief that he would unconsciously make himself our ally.

In the morning of this day, having learned that the road to Madruga was in very bad condition, a patrol, consisting of one cavalry officer and several privates, accompanied by the wagon wireless outfit, was sent in that direction. Their orders

were to go to the neighborhood of Madruga by one road and return by another, making road reports en route by wireless. This was done, and the wireless road reports began to come in at 11:40 a. m., continuing until we had been advised of the patrol's observations all the way to the river at Madruga. By 1 o'clock in the afternoon we knew what kind of a road to expect the following day; just which portions were calzada, which were graded and which were deep mud, etc., etc. The wagon wireless outfit had accompanied the patrol, had been set up quickly when necessary and had sent back to the camp wireless station over 260 words containing the information which they had been sent out to get. In addition to handling this scout information, our headquarters wireless station had maintained communication with Camp Columbia all day.

At night, the officers of the command were assembled, the information gathered during the day was discussed and the field order for the next day's advance was published.

NOVEMBER 6.

The calzada leading eastward from Catalina stretched its smooth, white surface for several miles before it led us to the unfinished road among the hills and then down into the valley beyond where the road became a black and bottomless bog. Here wagons and guns and caissons would neither slide, roll nor float, though ultimately, by employing one or all of these methods, together with considerable lifting and dragging and some verbal encouragement, all carriages were ferried through the mud sea. The cavalry horses floundered through the thick mire, sometimes sinking to their bellies. One section of the wagon train had to be taken off the road and up a steep elevation, along the crest of which a hard trail was found. By means of this hill trail and by passing through the yard and fields of a neighboring "ingenio" these wagons were finally brought around to the passable portion of the main road. Just outside of Madruga the approach to the viaduct entering the town was found to be unfinished, and this necessitated the use of an old road near by which had to be altered somewhat by our labor before the wagons and guns could get through. After this came the pull through the rocky streets of

Madruga to our camp on the north side of the town. The streets of Madruga constitute one of the world's most eloquent testimonials to indifference and ignorance. Their flinty, uneven, narrow and tortuous flights made a snappy and impressive climax to a day's road experience which closely resembled a certain historic definition of war in more ways than one.

Although the day's lessons in land transportation were severe and most instructive, the command made its camp at Madruga in fine spirits and with men and animals alive to the tactical necessities of the hour. The advance guard had been pushed well to the front after leaving Catalina, as it was certain that contact with the "Blue forces" was only a matter of a few marches and might come at any time. Discovering nothing *en route*, the advance guard had entered Madruga, passed through, outposted our camp site and pushed patrols eastward toward Ceiba Mocha.

In the afternoon an outpost exercise was had, the terrain at Madruga lending itself admirably to this particular phase of instruction. Cur camp was in a cup which at first glance resembled the crater of an extinct volcano. The high hills immediately around the camp afforded a view for miles in every direction, and to the crest of these encircling hills two troops of cavalry were sent and instructed in the general principles of studying terrain and the method of adapting outposts and patrols to the ground.

After this, outposts were established on the road leading towards Matanzas, the line of observation extending beyond a large range of hills called Loma de Gloria. When the nature of the outpost had been thoroughly explained to all of the men, the force was withdrawn to camp. Although intended principally for instruction, it was learned afterwards that this afternoon outpost exercise at Madruga had been of value in the way of security, as its formation and operation had been seen by the "enemy's" scouts and had deterred the "Blue force" from attacking our camp that night, as they had intended until they observed the far-flung line of out-posts.

However, on our part, precaution was taken to provide for just such a night attack. Each organization was assigned a certain zone of activity and a certain particular function, operative in case of attack. At dusk all the officers were assembled, the night dispositions to repel attack were ordered and explained, and the field order for the next day's march was read. In the meantime the "information division" had been operating upon the local station-master and other "inhabitants of the country" and had ascertained that about two companies of infantry were in camp somewhere near the Finca Ingles, about four miles to the eastward and on our line of march. In order to get more definite information it was decided to send a spy into the "enemy's" camp that night. About 10 o'clock a peasant's saddle, bridle and clothing were obtained and a soldier who could speak Spanish fluently-being a Cuban by birth—was equipped and clothed with these articles and mounted on a pony. An officer in uniform accompanied this spy to the vicinity of Ingles and then sent the bogus "paisano" into the "enemy's" lines. The soldier penetrated. the "enemy's" outposts and located their camp but became separated from the officer and did not return to our camp until after daylight the following morning, the officer having returned about 1:30 a. m. as per arrangement. However, the night's work had been successful as it gave us information that the "enemy" was actually close at hand and, by his actions, apparently looking for trouble.

Shortly after our arrival at Madruga the wireless station was in operation and during the day was in communication with Camp Columbia, Havana, Key West and the transport "Kilpatrick."

NOVEMBER 7.

In the belief that contact with the enemy would certainly be made this morning, it was decided to march the main body by the road Madruga—Ceiba Mocha while Troop "G" 11th Cavalry marched around the south and west sides of the "Loma de Gloria" then following the trail south of and parallel to the route of the main body until a point was reached where it would be possible to approach the enemy's position from the east while the main body attacked him from the west: this was what actually happened. The command left Madruga at 7 a. m. and the advance

scouts of the advance guard were in touch with the enemy just east of Ingles at 8:05 a. m. At 8:30 the advance guard commander, Captain Parker, was ordered to attack but not to push the enemy, as it was desired to keep the enemy about where he then was until Capt. Tompkins had time to approach from the east. At 9:30 a. m. two troops were ordered to join Capt. Parker in pushing the attack and a little later the battery was put in action. Just as the battery joined in the attack, Capt. Tompkins' troop closed in from the east, approaching the rear of the "enemy's" position along two roads. As our plans had worked out with mathematical precision and as the maneuver had reached that close, desperate, point-blank phase of utter fearlessness that characterizes blank-ammunition combats, it was decided to sound recall.

"Our friend the enemy" then proved to be two companies and the machine gun platoon of the 28th Infantry from Matanzas, in the field for 21 days. The courtesy of the commanding officer at Matanzas and the zeal and interest of his command had resulted in their co-operation with our plans to the extent of this very interesting contact at Ingles.

Our command had been drawing interest, enthusiasm and instruction out of the "enemy's" presence for two days before we actually struck them, so that the fight at Ingles was but a minor part of the benefit. As to the tactical triumph at Ingles, the usual "post-mortems" developed only the inevitable verdict to the effect that the question of victory would remain one of the unsolved questions of history, each side claiming something of superior military genius and splitting even on valor.

As to comment, it may be said that the "Blues" claimed not to have been taken in rear by Capt. Tompkins but in flank, they claiming their line of retreat to have been to the north and not to the east as we had presumed. To answer this, one need only examine the "general situation" of our problem which makes it clear that the line of communications and of retreat of any "Blue detachment" must have been to the cast or southeast and that any withdrawal to the north was relinquishment of communications and suicide. Our dispositions were therefore sound and in accordance with the assumed situations of

the Blue and Brown armies. For the Blues it may be said that their choice of position was excellent and they would have caused our column some delay, before our superior numbers and our attack on their rear would have ousted them from their control of the calzada.

The Signal Corps company had flag and heliograph outfit with the advance guard and with the main body on this day and messages were exchanged by flag just before and during the firing. The distance, however, was too small to make the flag preferable or equal to mounted courier service.

After the action at Ingles the command proceeded along the new calzada to Ceiba Mocha where a stop was made for noon-feeding and rest. That afternoon, owing to a misunderstanding by the battery commander, that officer marched with his battery and the Signal Corps company to Matanzas, preceding the Commanding Officer and the cavalry squadron by about one hour and with no advance scouts so far as known. As a result the battery and Signal Corps company were ambushed in an impossible position between the hills and the San Agustin river, receiving the fire of two companies and the machine gun platoon of the 5th Infantry from Cardenas and one company of the 28th Infantry from Matanzas at close range, with practically no means of self-defense. The affair was unfortunate, but the lesson was a most excellent one and it was administered at just about the right time and in the right place.

The 5th Infantry contingent, who contributed to our operations on this date and who figured in our plans for more than one week afterwards, added much to our scheme of instruction by adopting the plan of co-operation. They had our thanks for their zeal and military interest.

NOVEMBER 8.

Being Sunday this day was spent in rest, sight seeing and in enjoying the cordial hospitality of the 28th Infantry. The Signal Corps company persisted in their usual enterprise and raised the wireless pole. Communication with Camp Columbia was not established owing to the location of our station on low ground with a neighboring range of high hills interposed between us and Camp Columbia and to the further handicap of

an inadequate ground for the transmitting side of our apparatus, the surface being limestone with almost no earth covering.

NOVEMBER 9.

Leaving Matanzas on the Cidra road, the command marched via Guanabana to the bridge over the Canimar River about $4\frac{1}{2}$ miles west of Limonar, and made camp on the west bank of the river near the bridge. Save the last two miles, the road was splendid all the way. A driving rain kept up during most of our march and became torrential shortly after we had pitched camp.

The tactical exercise of the day was interesting and was very well done. As a force of the "Blues" had been located south of Matanzas on the Cidra Road preparations were made to forestall any hostile action on their part. As the terrain invited attack on our train, the situation seemed to demand a formation for "the defense of convoy." Accordingly the advance guard was operated with an unusually wide front, two guns were marched at the head of the trains and two at the rear, while the wagons were ordered to take double column and to keep moving in case of an attack which did not appear to be by large numbers. The rear guard was also given more cavalry than usual. In this compact but nimble formation the command proceeded, ready for any contingency. The advance work, though executed with absolutely war time thoroughness by Capt. Tompkins, found only one trace of the enemy and that was his trail, 36 hours old, preceding us down the Cidra Road.

Despite the heavy rain in camp the Signal Corps company put up the big pole and heard Camp Columbia plainly but could not make Camp Columbia hear our signals. It appeared almost certain that we would establish communication with Camp Columbia, but the wind increased in velocity and the rain continued at such a rate that the pole, for safety's sake, had to be taken down. The work of the signal corps men in taking down the heavy 100-foot pole, with the wind and rain at almost typhoon rage, was beautifully done.

NOVEMBER 10.

From the Canimar River bridge to Limonar we marched on a fine calzada. After stopping at Limonar to pick up forage which had been shipped there, we marched southeast along the dirt-road which parallels the track of the United Railways of Havana passing through Sumidero and Coliseo making at the and camp Central Amalia east of Coliseo. This camp was within striking distance of Cardenas and was an essential limit to this day's march owing to the frightful condition of the roads due to the recent heavy rains. Troops passed along without difficulty but for wheel transportation "the horrors of the road were beyond description," to use the words of the rear guard commander-Capt. Tompkins-who was out all night with the wagons. The difficulty of getting wagons through was due largely to the fact that standing water covered the road to a depth of one or two feet and sometimes for a stretch of a mile at a time. Under the water was a labyrinth of boulders, ruts, mud-holes, brush and every conceivable road evil, but all invisible to the drivers and the animals on account of the water. The deep mud and water also made it difficult for the men on foot to pull out wagons so that much of the pulling out was done by mounted men. Near Sumidero the left hind wheel of an escort wagon collapsed, but by utilizing some broken tongues and reaches a travois was soon constructed by means of which this wagon shu eventually all the way into Cardenas where a new wheel was obtained. The rear section of the wagon train consumed all night in going five miles but the last wagon rolled into camp at 5 a, m., with all concerned triumphantly oblivious to the fatigue involved. Capt. Tompkins and his troop did splendid work in getting the wagons through and reaped a rich harvest of valuable experience, every man getting a lasting object lesson in the sure triumph of ingenuity and hard work over almost any kind of obstacle.

As the main body left Limonar, on this march 2nd Lieut. Jackson, 11th Cavalry, was detached and sent with four men to reconnoiter the projected calzada via Ingenio Triunfo, Bottino and Colonia de Mamey to Esquina de Teja.

This had been our proposed line of march but the route was reported impassable and Lieut. Jackson's reconnaissance proved that the reports were only too true. According to his reports the projected calzada was at that time impassable for our wheel transportation. Lieut. Jackson marched along the entire route as above indicated and rejoined the command that afternoon in its camp.

As to the main body the only tactical activity was in the well advanced and alert advance guard which carefully searched our front as we passed mile after mile through the boundless cane fields.

NOVEMBER 11.

Having contested successfully on the preceding day with the worst creations of the elements in the way of bad roads and having experienced no opposition from the "enemy," we prepared on the 11th to seize the city of Cardenas. The plan of advance was worked out the night before and explained to the officers of the command shortly after daybreak. Troop "F." under Capt. Parker, was to precede the main body by one hour, seizing the localities Esquina de Teja and Lagunillas, then scouting the roads leading from these two places towards Cardenas and searching the range of hills which commanded our approach. Capt. Vidmer with one troop and one gun was to escort the train via concealed road through San Gabriel to Esquina de Teja where the transportation must eventually take the calzada. The detachment commander in the meantime was to march the main body to Buena Vista which he could reach regardless of the controlling line of hills and from which point he possessed three or more roads from which to select a line of advance for a flank attack or turning movement, in conjunction with Capt. Parker's screen and demonstration. This plan worked beautifully, the different elements completing their assigned tasks with clock-like precision. Capt. Parker having reported only a handful of the enemy in his front and having seized the main road over the hills, the main body proceeded to this road and along it to Cardenas, Troop "E" (Lieut. Harris) being sent on a parallel road by way of Carmen-Pildero and Lima. On the north slope of the hills overlooking Cardenas, a commanding artillery position was selected and the battery soon reduced the city. Capt. Parker, with his advance guard, seized the city at 10:40 a. m. Though the victory was bloodless it was a very pretty demonstration of the war-game and every one was particularly satisfied with the happy accord of map-study and practical execution.

NOVEMBER 12.

This day was spent in camp at Cardenas, the command enjoying the cordial hospitality of the 5th Infantry. The Signal Corps company put up the 100-foot pole and also tried the kite. Communication with Camp Columbia was not established. While operating at Cardenas, a loose pony ran into one of the guys at top speed, tearing the guy loose on the opposite side and bringing the pole down with a crash. Three sections were broken at the joints and in repairing the pole ten feet of its length had to be sacrificed. The spirit of this Signal Corps company was again demonstrated by this misfortune. It seemed that the big pole had hardly struck the ground before the signal corps men were all over it starting in with its repair at once.

NOVEMBER 13.

Cardenas being the most easterly point of our march, the return to Camp Columbia was undertaken under conditions in keeping with the problem controlling the general tactical considerations of our 21-day operation. (See General and Special situations, ante). As our "raid" around the "Blue right" had reached the objective originally named, it was assumed that at Cardenas a wireless telegram had been received from the Brown commander directing our immediate return and indicating the advisability of taking a more northerly route to Matanzas on account of information that certain strong detachments of the Blue army were marching from the south toward Matanzas in an effort to cut off our force. With this hypothetical prospect before us we marched from Cardenas toward the northwest—on Friday morning the 13th, and followed a fine road to Camarioca, where we camped.

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A well regulated advance guard was our only tactical provision on this march. About 4 miles out from Cardenas the point of the advance guard sent back word that a company of Infantry was advancing toward us on the same road. The advance guard commander (Capt. Parker) warned the main body, drew his troop off the road, took a concealed position and allowed the advancing company to walk into his ambuscade. The completeness of the surprise being equivalent to annihilation of the company—which pertained to the Cardenas garrison—they were allowed to go their way while we resumed our march with advance guard as before. After the command had watered and fed at Camarioca the Commanding Officer took steps to insure the safe and expeditions crossing of his command over the Canimar River then about 11 miles to our front (west) and 7 miles east of Matanzas. This crossing must be undertaken on the following day and it was probable that the "enemy" were already at or near Matanzas. As the points of crossing in our front appeared to be only the rope ferry at San Jose and the ford at Tumbadero, -3 miles south of the ferry-and as our guns, wagons and horses would necessitate at least 12 hours' work in crossing even if we were unopposed, it appeared to be clear that a failure to immediately seize the ford and ferry would likely involve us in disaster. As much of the day was still available, it was determined to send one troop and one gun to seize the ferry and the ford before sunset, the remainder of the command to advance to the crossing at daylight on the following day. Accordingly one troop and one gun-Capt. Tompkins, 11th Cavalry-left camp at 3 o'clock p. m. marching toward the ferry by the road Camarioca-Cuevas de Hoyo Colorado-San Jose. An officer's patrol under 2nd Lieut. C. S. Jackson, 11th Cavalry, preceded Capt. Tompkins' command. In order that Capt. Tompkins might not be unsupported during the night and very early morning, in case of trouble at the ferry, it was decided to put another troop en route for the ferry by a trail which would almost certainly insure its arrival at the Canimar River unmolested. The trail selected was from Camarioca north to the coast, thence west along the coast to Matanzas Bay and thence south along the east bank of the Canimar River.

With the ocean on one side and the "Piedras de Camarioca"—an impenetrable thicket of bush, thorns, cactus and sharp stones—on the other side this route was a safe one. Troop "H" (Capt. Vidmer) marched from camp at 3:15 p. m. along the trail above mentioned—with orders to camp at Ipargo that night and join Capt. Tompkins early the next morning. We had therefore flung forward that afternoon along the main route to the ferry a force capable of taking care of its own front and warding off any attack that might come from the south—which was very unlikely east of the river—while its right was protected by the impenetrable "Piedras de Camarioca," and its re-enforcement at the river insured by the troop which had been sent along the protected coast route.

NOVEMBER 14.

The force dispatched on the afternoon of the 13th had successfully accomplished their mission. Lieut. Jackson's patrol reconnoitered the ferry and then the ford during the afternoon; watching both points. At 6 o'clock p. m. Capt. Tompkins had seized the ferry at San Jose, put its western approach under the sweep of his gun, crossed one platoon to the west bank and advanced the outposts and patrols of this platoon along all the trails leading to the ferry. His scouts controlled the ford at Tumbadero that night and crossed it at dawn. At eight o'clock that night Capt. Vidmer had arrived at Ipargo and his scouts were watching the tide-water ford at the mouth of the Canimar River.

On the morning of the 14th Capt. Vidmer joined Capt. Tompkins at the ferry and Troop "H" crossed to the west bank while Lieut. Elting's platoon of Troop "G," which had crossed the night before, pushed on to within sight of Matanzas. Lieut. Elting established heliograph and flag stations which connected his own station at the Bellamar Caves with his advanced outposts at the edge of Matanzas and with Capt. Vidmer's reserve back at the Canimar River. The force at the Tumbadero ford likewise extended its observation to the west and to the south.

Thus on the morning of the 14th our main body advanced from Camarioca to the Canimar River, our crossing of that stream already made certain and safe by the prompt action

of the preceding afternoon. When the main body arrived at the river tactical considerations of the problem were dispensed with for the day, the timely seizure of the crossings having fulfilled all necessities along this line and given us the victory. In this connection it may be remarked that a neighboring garrison, in a spirit of co-operation had intended to again assume the role of the "Blues" and to oppose our crossing of the Canimar River but had not made allowance for our activity in seizing the crossings of the river on the same day that we marched from Cardenas.

The day had been replete with most interesting incidents pertaining to transportation and ordinary marching. In the first place the road from Camarioca to the river was a marvelous, rock-bottomed, boulder strewn path of successive bumps and jolts. That it is called a "camino" in Spanish illustrates the elasticity of that language and the fine imagination of the people who apply the word, while to adopt the translation of "road," in English, is to confess that one has never traveled over this particular route.

The fact that guns, caissons, wagons and ambulances passed over that route with only two wheels broken—one ambulance and one escort wagon wheel—proves that our wheels as now made will suffice for any roads that they may encounter. That no carriages of any sort were upset or relieved of any load testified to skillful work on the part of the drivers and teamsters.

In the afternoon the crossing of the main body was begun, the battery being the first to start. The river at this point is about 125 yards wide. The ferry boat consists of two iron tanks about 18 feet long and 4 feet in diameter, secured together and surmounted by a staunch wooden platform with a substantial floor about 20 feet long by 12 feet wide. For considerations of safety we fixed the minimum load about as follows: Horses, 7; mules, 8; escort wagon, 1, with 4 mules; guns, 1, with 2 horses. Such a load was, on the average, pulled across the river in about 12 minutes with 15 men on the rope, the round trip consuming about 20 minutes. The battery and the

Signal Corps company consumed the hours 3 to 6 p. m. that day and did not entirely complete their crossing.

As to communication on this day, the entire command was well served. Immediately upon arrival in camp the Signal Corps company established a field buzzer line from the camp Headquarters on the east bank of the river to a station on the west bank, the wire being used as a cable in the river. Heliograph stations were also used for the transmission of messages, and at night, the lantern-signals flashed from one bank of the river to the other. The wire was a great convenience, on account of the density of the undergrowth along the river and the fact that the river at this point flows through a deep canyon. Our camp on the east bank was high above the ferry and some distance back.

NOVEMBER 15.

Troops "G" and "H" with their wagons had ferried across and been sent to Matanzas the day before. By 9:30 this morning the battery had completed its crossing. By 10 o'clock the Signal Corps company had crossed and finally at 12 o'clock the crossing of the cavalry train was accomplished. Altogether we had consumed 12 hours in crossing. The time could have been considerably reduced but there was no object in attempting to make a record when such an effort might very likely have resulted in loss of life or property.

In the meantime Troop "E" had been sent this morning to ford the river at Tumbadero which they did with ease. Troop "F" selected still another method of crossing which was by swimming the river. This swimming was done at the ferry where the banks had shore spaces sufficiently large to afford ingress and egress to the animals. Capt. Parker supervised the swimming of his troop across the river with commendable energy and skill.

Possibly no instruction gained during the twenty-one days was as valuable as this crossing of the Canimar River. The stream was crossed in daylight and in darkness, Lieut. Elting's platoon of Troop "G" having ferried over on the night of November 13th and every possible method of getting over was used; one troop fording, one troop swimming, and the battery,

Signal Corps company and two other troops ferrying across. Every officer and enlisted man saw for himself the amount of time absolutely necessary, the degree of hard work involved and the methods of loading and unloading animals and wheeled transportation. All could observe the best method of hauling the ferry back and forth and the importance of handling carefully the only ferry available. The effect of the river in delaying military operations was impressed lastingly on all concerned.

The Signal Corps company added to the day's interest by communicating with Matanzas by heliograph. The command had undertaken no tactical exercises in addition to the river crossing instruction and camped in Matanzas that afternoon.

NOVEMBER 16.

This day was spent in camp at Matanzas. The Signal Corps company set up a wireless station—using the "division set"—on high ground about one mile from the point where the station was opened on the 8th of November. Although the pole was 10 feet shorter than on the 8th no difficulty was experienced in raising Camp Columbia. From this hill station the messages were repeated to camp Headquarters in Matanzas where one of the portable wireless sets had been established.

NOVEMBER 17.

The command marched along the Matanzas—Ceiba Mocha calzada to the bridge across the Rio San Agustin three miles east of Ceiba Mocha. Here camp was made in one of the most picturesque spots that we had seen in our entire march. Our tactical activity was confined to a well conducted advance guard, and a flank march by Troop "H"—Capt. Vidmer. This troop was sent from Matanzas by way of the Yumuri Valley to search that fertile district for an assumed small force of the enemy. Their march along the Yumuri River continued as far as Corral Nuevo, turning thence due south and crossing over the slopes of the Pan de Matanzas to our camp in the valley of the San Agustin.

At this camp wireless communication with Camp Columbia was established by means of the kite alone, the limitations of the "division pole" having been sufficiently determined. With the kite carrying about 500 feet of wire, Columbia was raised in a few minutes after reaching camp.

NOVEMBER 18.

On the assumption that small detachments of the enemy had been reported to the north and to the south of our line of march to Madruga, the command marched on this day as a single column as far as Ceiba Mocha—and in three columns after passing that town. Troop "F" (Capt. Parker) was sent along the road Finca Carlota - Xenes and Troop "E" (Lieut. Harris) was sent along the trail which passes east of the Loma de Gloria and across the valley south of the "Loma" to the Finca El Padre. The function of these two troops during the day was to act as flanking forces for the command marching along the calzada. Lieut. Harris was instructed to make camp near the Finca El Padre and there await further orders using his heliograph, flags and flash-lantern in communicating with the camp of the main body at Madruga. Capt. Parker was to camp among the hills north of Madruga, under similar instructions. Each troop was to do individual cooking until it rejoined the main body with which its wagons marched.

At noon that day the main body arrived at Madruga, camping as before in the little cup surrounded by high hills which commanded the valley to the east, south, west and northwest. In order to take full advantage of the terrain, the artillery, the signal facilities and the location of our two outlying troops, a new problem assumption was adopted upon reaching camp. It was to the effect that our troops in camp represented a much larger force in retrograde movement, with Troop "F" as an outlying force protecting our right rear and Troop "E" protecting our left rear. Troop "G" was sent to a strong outpost position about one mile east of Madruga protecting the calzada in our immediate rear. The guns of the battery were posted on the hill where their location was described as follows

by our Chief of Artillery, Captain Gatley: "Position well night ideal. Complete circle about town under fire of guns from three positions, weak only at N. E. where strong outpost in direction of Aguacate was necessary" (Troop "F").

A signal station was opened on a high hill east of the camp and communication with all portions of the command was established in the following time limits after the command reached camp:

- 1. Troop "G" outpost 1 mile E. of Madruga by buzzer wire 8 minutes.
- 2. Troop "F" outpost $2\frac{1}{2}$ miles N. of Madruga by flag 17 minutes.
- 3. Troop "E" outpost 4 miles S. E. of Madruga by helio. 18 minutes.
- 4. Camp Columbia 49 miles W. of Madruga by wireless 22 minutes.
- 5. Artillery positions by buzzer as soon as positions were indicated.

In this problem the field wire was run from the Troop "G" outpost east of Madruga to the artillery positions as a trunk-line, on which were the commanding officer; the Troop "G" outpost; the Chief of Artillery and the main signal station. During the night, messages were exchanged with the outlying troops by means of flash-lanterns. Everything worked perfectly and without a hitch. As will be seen from the above record of communications and from a study of the terrain around Madruga this was largely a signal corps—artillery problem.

NOVEMBER 19.

From our camp on the Rio San Agustin on the 17th inst. two officers' patrols had been sent forward to reconnoiter the roads from Madruga south to San Nicholas and from San Nicholas northwest to Guines. By noon of the 18th inst. we had been informed that for our wagons and guns these roads were impassable—that it would take a week to get to Guines, so deep had become the mud as a result of the prolonged rainy season. It was therefore decided that from Madruga the guns, trains and signal equipment-wagons would march by the main

road to Catalina escorted by two troops of cavalry, while the other two troops of cavalry would sweep the country between Madruga, San Nicholas and Guines in which region a small force of the "Blues" was assumed to be. Troops "E" and "F" were therefore informed by flash-lantern on the night of the 18th that they would come in to Madruga at daylight of the 19th prepared to march to Catalina. Troops "G" and "H" were organized into a flying column under Capt. Tompkins with orders to cover the country lying between Madruga, San Nicholas and Guines, on the 19th, camping that night at the latter place and reporting results by wireless; then to march to Catalina on the 20th. The pack mule wireless set was sent with Capt. Tompkins.

Accordingly the main body moved to Catalina on the morning of the 19th, experiencing some difficulty with the roads, but nothing to compare with our work in the same place on November 6th. At 11:30 a. m. we went into camp. At 2:30 p. m. Capt. Tompkins reported, by wireless, his arrival at Guines and at 3:30 p. m. Capt. Vidmer's arrival with Troop "H"—the former having marched to Guines by way of the road Madruga—Finca San Blas-Ingenio Amistad while the latter marched by the road Finca Zaldiva—San Nicholas—Rio Seco; the two troops thus having completely covered the zone assigned to them. They reported the roads passed over as the very worst they had ever seen.

NOVEMBER 20.

The main body spent this day at La Catalina. The battery and Troops "E" and "F" 11th Cavalry were out at daylight to cover the approaches of Catalina from the direction of Guines, where two troops of the "enemy's" cavalry were assumed to be, on mischief bent. Troop "E," less one platoon, screened the town on the south, covering the hill-trails with its patrols, while Troop "F" with one platoon of "Troop "E," and Battery "F" 3rd F. A., Captain Gatley, held the approaches along the main roads from Guines entering Catalina from the west and southwest. These troops went into position about 6 a. m., their positions having first been occupied by cossack posts at 4 a. m. At 10 a. m. Capt. Parker, with Troop "F"

inflicted considerable damage upon one of the troops approaching from Guines along the Ojo de Agua road and then withdrew his troop to the guns at the edge of the town. At 10:30 a. m. both the Guines troops attacked the cavalry and the guns at the western edge of the town, but the defense was, of course, too strong and must have won decisively in time of war. At 10:40 a. m. the problem ended and the Guines troops "G" and "H," joined the main body.

NIGHT, NOVEMBER 20-21.

Camp at Catalina was struck at 9 o'clock on the night of the 20th and the command started for Cuatro Caminos. Every preparation had been made for a quiet and rapid withdrawal from Catalina, as though in time of war, and our plans were carried out in a way which literally "astonished the natives." These latter, by the way, showed in their actions that they were astonished at the expeditious withdrawal by night of so large a mounted command and they seemed puzzled as to what unexpected thing we might do next. Our march through the black night was without incident, save the experiencing of unusually low temperature for the tropics, and at 3 o'clock in the morning we made camp at Dique, a public reservation, west of Cuatro Caminos. The remainder of the day was spent in such camp routine as was necessary and in recovering the sleep lost the night before. The signal corps company opened wireless communication with Camp Columbia at noon, with a kite, also established a heliograph station on a hill 4 miles west of camp, thus communicating with Camp Columbia also by flash.

NOVEMBER 22.

The command attempted no tactical exercises as the day was Sunday. As an experiment the signal corps company stretched a wire between two palm trees about 150 feet apart and thence to the instrument. With this improvised aerial, perfect communication with Camp Columbia was maintained all day. The Inspector General, Army of Cuban Pacification, joined the command in this camp.

NOVEMBER 23.

This day's march to Camp Columbia was devoted to the solution of a tactical problem presented to the command by the Inspector General. The problem was stated as follows:

General Situation.

A force of United States troops is advancing from the southeast to attack a large body of irregular troops occupying a stronghold at Camp Columbia.

Special Situation.

U. S. TROOPS.

The main body leave Cuatro Caminos early Monday morning, the 23d inst. The Commanding General sends forward his squadron of cavalry with orders to reconnoiter the country about Camp Columbia, locate any outlying troops defending it, and determine the most advantageous route for approaching and attacking it.

He announces where he will march and gives orders that all important information shall be transmitted to him with as little delay as possible.

On the evening of the 22d the officers of the command were assembled, the problem read to them, the wishes of the commanding officer made clear and an appropriate field order published. In the absence of any information as to when the problem would end, it was decided that 2 o'clock P. M. would be adopted as a convenient hour for the termination, although the terms of the problem really necessitated at least the entire day for a satisfactory solution.

The scheme of advance was to send Troops "E" and "H" under Capt. Vidmer along the main calzada through Cerro, towards Camp Columbia, these two troops to be a screen immediately in front of the main body, which would follow along the same road, communication between the advance cavalry and the main body to be by mounted courier. Troop "F" under Capt. Parker was to proceed "across country," as it were, to Vento Springs, thence to Arroyo Arenas, near which point he would establish a wireless station and radiate his scouts toward the western line of Camp Columbia's outposts. Capt. Parker was given the pack-mule wireless set as his means of communication. Troop "G" under Capt. Tompkins was to proceed by the best available

road to Vento Springs, near which place to establish a wireless station and radiate his scouts against the southern outposts of Camp Columbia. Capt. Tompkins was given the wagon wireless set as his means of communication.

On the morning of the 23d the cavalry squadron moved out at 6 o'clock. The Inspector General had prohibited an earlier start. The main body marched at 7 o'clock. As the main body approached the western limits of Cerro a message from Capt. Vidmer warned the commanding officer that a line of the enemy's outposts had been discovered extending from Puentes Grandes to Colon Cemetery on the east bank of the Almendares River. As a favorable and protected halting place was near at hand the entire main body moved off the main road and rested-awaiting developments by the advance cavalry. Messages by courier kept coming in from Capt. Vidmer, who had extended his line of observation from Vedado on the north to the railroad bridge over the Almendares River beyond the Finca Usillo on the south. The enemy's eastern outposts were quite well located and several prisoners captured. Our Chief Signal Officer established an observation station on the tower of a house near by and from this point of vantage located one of the "enemy's" flag signal stations on the Buena Vista water tanks, incidentally reading some of their messages by the use of his glasses. At 1:30 p. m. an order was received from the Commanding Officer at Camp Columbia to proceed to that place, the problem having been declared at an end.

The troops which had been equipped with wireless sets unfortunately did not figure in the solution of this problem owing to its premature ending at 1:30 p. m. One of them could not find a road over which the wireless wagon could be taken to its objective near the Vento and so proceeded without its means of communication—penetrating ultimately well into the enemy's lines to the south of Marianao. The other troop made a long march encircling Camp Columbia to the Playa de Marianao, but, having out-marched its pack-mule wireless set was without means of communication—until the time limit on the problem had expired. As its wireless apparatus finally caught up with it, this latter troop would have sent in plenty of information had the problem continued during the remainder of the after-

noon, or if actual war had existed and the troop had been similarly situated. The troop which had had the wagon wireless set would also probably have sent back some information by mounted or foot messengers, though this would have been slow and uncertain, owing to the distance and to the enemy's numerous detachments intervening.

With regard to the solution of this problem it may be remarked that a commander in time of war would have remained at Cuatro Caminos or thereabouts until his information began to come in. As it was, our main body, through circumstances, had to take up its march only one hour after the departure of the advance cavalry, thus robbing the advance cavalry of the time allowance which must be given to any force charged with reconnoitering an enemy's extended position some distance removed.



4 Reprints and Translations.

LESSONS IN MODERN TACTICS.*

THE Russo-Japanese War came at a most opportune time as regards the British Army whose tactics had shortly before been almost entirley remodeled by the South African War. It was a grave question whether this had not been overdone and there were many who considered that we had gone a great deal too far in our changes, maintaining that a war between two armies, modernly equipped and organized, would be a very different matter, requiring very different tactics, from the Boer War.

In the Russo-Japanese War we had exactly what was wanted to prove or disprove these theories—two armies whose rank and file were of equal morale and the issue of whose encounters would therefore depend entirely on the handling, both strategic and tactical, and previous training of the opposing forces. As the war progressed it became more and more obvious that the advantage of leading and training lay all on one side. That a nation like the Russians, whose rank and file were of the best, could go through a whole campaign without a single success of any magnitude, brought home to every one the stupendous importance of training and leading. We now look back on a war waged under almost every conceivable variation of conditions—in intense heat and bitter cold—over plains as flat as those of India and over mountains which compare with our own frontier ranges—through luxuriant crops and desert tracts -an almost ideal school, in fact, from which to learn the lessons

^{*}Prize essay by Captain H. D. Shaw, First Gurkha Rifles. Reprinted from the Journal of the United Service Institution of India for January, 1910.

of war; and it only remains to the onlookers to learn the lessons taught, and train their armies to the altered circumstances of modern warfare; for one fact stands clear to all who watched, that no matter how adaptable the troops of a nation may be, that nation will stand but little chance of success which enters the lists of modern warfare without the most up-to-date weapons, the most up-to-date training in the best use of those weapons, and the skilled leading now required of all in authority in modern armies, from the group commander to the C.-in-C.

In dealing with the tactical lessons of the war it will be most convenient to take each of the three arms in turn, and after discussing the lessons which affect them to finish by dealing with the tactical questions involving all arms generally.

ARTILLERY.

Though the tactical importance of artillery may be said to have been fully upheld by the Manchurian war, more cannot be said. The tremendous destructive powers of modern artillery were to a large extent neutralized by the fact that, after the first few occasions, troops of necessity adapted themselves to the new conditions; it being obvious to all that exposure of troops in any form of dense formation within range and sight of hostile artillery meant certain disaster.

Equally did this apply to the artillery itself of both sides, and invisibility of the guns became of paramount importance; so much so that after the middle of June, 1904, practically nothing but indirect fire was used by the artillery of both sides. The state of affairs soon resolved itself into the following: Infantry could not hope to advance by day against hostile artillery, but the latter could do little by night, which therefore became the time when all advances took place, troops being entrenched and concealed by daylight.

The chief tactical lesson of the war as regards artillery was, therefore, the necessity of concealment and the supersession of direct fire by indirect fire.

To cite a few examples of the importance of concealment—at the battle of the Yalu, April 30th, 1904. The Russians had made no attempt to conceal their guns, whereas the Japanese had made use of every device imaginable. It is true that in

this battle the Japanese had a large preponderance of artillery, both in numbers and weight, but that alone was not responsible for the fact that the Russian artillery was completely silenced in 30 minutes; a carefully concealed and cleverly worked artillery would have been of almost incalculable use to the Russians that day; as matters went, by its prompt destruction it merely served to improve the morale of the whole Japanese army at a critical moment.

Again, the great effect of a single Japanese battery at the battle of Telissu (June 14th, 1904), which opened fire at about 1:30 p. m., and which could not be located by the Russians, is a striking instance of the advantage given by concealment. Though up to this moment the Russian artillery had dominated that of the Japanese and rendered any advance of the infantry impossible, the action of this invisible battery at once changed the whole aspect of the fighting. The Russian batteries were silenced and the Japanese infantry launched to the attack.

But by far the most striking instance of the enormous powers of a concealed artillery was the action of the two small mountain guns at the battle of August 26th, 1904. Although, in this case there was no hostile artillery to be reckoned with, the position in the corps from which these two guns turned the fortunes of the day was well within rifle range of the enemy's trenches, and had they given the Russians an inkling of their position, they must have retired immediately or ceased firing.

We next come to the vexed question of concentration versus dispersion. On the whole, the war may be said to have answered in favor of concentration, but always subject to the absolute necessity of concealment. This necessity of concealment has made it almost impossible for guns to take up or change positions during the progress of an action. Guns must therefore be placed, under cover of darkness, in such positions from which they will best be able to assist the infantry attack; and there they will probably have to remain at any rate until next night. The old practice of keeping a part of the artillery with the reserves may be said to be dead, chiefly owing to the above-mentioned difficulty of bringing up guns into action during the progress of a battle. All this tends to concentration. The Japanese, working with an inferior weapon and, generally

speaking, against superior numbers, obtained satisfactory results by concentrating their artillery in large batteries.

The chief exception to the above is the working of a palpably weaker artillery in face of an overpowering hostile artillery. Here the necessity of concealment becomes so vital as to compel dispersion even as far as to single guns. The Boers taught us this lesson in South Africa. To take two instances from Manchuria:—The Russians had two splendid opportunities to display the clever working of an inferior artillery at the Yalu and Nanshan (May 25th, 1904). In both cases, owing to the injudicious placing of their guns, these were silenced almost at once and were able to take no further part in the battles.

The next lesson we get is the necessity of heavy guns with an army. Not only must the field artillery be of the latest and heaviest pattern conformable with portability, but every army must also be accompanied by heavy guns and mortars.

Again and again throughout the war was the necessity of heavier metal felt. At the Yalu the mortars of the Japanese put all doubt as to the issue of the artillery duel out of the question. At Liao-yang, as in the fighting around Mukden, the heavier guns of the Russians almost always completely dominated the Japanese artillery. Both sides felt the importance of having the heavier guns and made the greatest efforts in this direction. Six inch guns were, whenever possible, brought up to the battlefield by rail—noticeably by General Oku in front of Lioa-yang in the fighting of September 1st to 4th; and by the Russians in the defense of Mukden at the end of February, 1905.

Another point brought out by the war is the value of howitzers. Their suitability to indirect fire, their power to search reserve slopes and their destructive capabilities against villages and field works render them of enormous use. Indeed, the war may be said to have proved them indispensable to cavalry. The failure of the Russian, General Mischenko's, cavalry raid (January 8th-15th, 1905) was almost entirely due to the absence of howitzers with the force.

As the war proceeded, and the night attack or night advance become more and more resorted to owing to the deadly nature of artillery fire by day, the want of powerful search-

lights attached to batteries became more and more apparent. This subject wants careful attention on the part of the authorities, as these engines are certain to play an important part in the next war.

Finally we come to the question of ammunition supply. Owing to the concentration and accuracy of the enemy's fire, teams had to be placed under cover further and further from the guns. This naturally enormously increased the difficulties of supply. In almost all the big battles of the war the artillery of both sides had to slacken or even at times cease fire owing to the necessity of husbanding ammunition. With modern quick-firing guns the expenditure in a prolonged battle proved to be far beyond even what was anticipated.

This subject also wants the most careful attention both as regards the accumulation at the front of the immense quantities of ammunition now required, and also as regards the moving it up to the guns from the teams, which may now be a distance of half a mile or even more. Some better means than moving it up by hand, which was the only way found possible in Manchuria, should, if possible, be evolved.

CAVALRY.

The lessons of the war in the tactical use of cavalry are particularly interesting and very pronounced.

The Russian cavalry went into the war with a world-wide reputation, and was known to be better horsed and more numerous at the seat of war than the Japanese Cavalry. The word Cossack was proverbial in Europe and stood for all that was good in light cavalry work. The Japanese cavalry was known to be poorly horsed, and its horsemanship also was generally supposed to be poor. No one doubted the crushing superiority of the Russians in this arm. And what happened? The Japanese Cavalry may be said to have accomplished much during the war; the Russian Cavalry nothing beyond actual protection.

The explanation for the complete reversal of all forecasts lies in the tactical handling of the respective cavalries. The Japanese employed their cavalry on the only possible principles on which cavalry can be used in modern warfare, that is, as a mobile infantry; and its use might have been greatly extended

had it been armed with the cavalry weapon of the future, the infantry rifle. In the whole campaign there is only one instance of cavalry charging according to the old cavalry style (the small affair of May 30th, 1904, south of Telissu), whereas it is no exaggeration to say that hardly a day passed in which cavalry had not to fight dismounted as infantry.

Therein lies the explanation. Cavalry has no longer a place in its old role on the modern battlefield, or in front of the modern army. The Japanese recognized this, and when they employed their cavalry for reconnaisance or protection in front of their armies, they used it as a mobile force, generally in conjunction with infantry and always prepared to dismount and act as infantry; and again on the battlefield they used it as a mobile force, available to move long distances to a threatened or critical point, but always prepared on arrival at that time to leave its horses and act as infantry.

There is a third important function of cavalry; that of raids, generally on communications, which we shall deal with more fully later on, but here again the fundamental lesson is the same; cavalry on the raid must these days consider itself as a mobile force, prepared to fight as infantry, with its horses at hand ready to enable it to pursue success or carry it to safety.

Let us now take these three functions of cavalry in turn, and deal with them more in detail. First as regards reconnaissance and protection.

The attempts of the Russian Cavalry to pierce the Japanese screen continually failed, owing to it always finding itself opposed to infantry or dismounted cavalry, against which it could make no headway. This was due partly to the fact that the Japanese protecting screen generally consisted of mixed infantry and cavalry, but very often the supposed infantry was dismounted cavalry. This piercing of the protecting screen to obtain information is undoubtedly one of the most difficult problems of future wars. The Japanese were certainly more successful than the Russians in obtaining accurate information, but although this was partly due to the faulty tactics of the Russian Cavalry, it was much more due to their well regulated system of spies, for which the circumstances of the war were particularly favorable to Japan.

The failure of General Sanzonoff's cavalry to gain any sort of accurate information as to the Japanese movements after the battle of Telissu (June 15th, 1904), although he was in actual contact for 23 days, is a notable example of this failure of the Russians to pierce the protecting screen.

As regards the best use of cavalry on the battlefield, we find many good examples. The sending of the 2nd Cavalry Brigade under Prince Kanin (Kuroki's last reserve) at the battle of Shaho to Chaotao on the 11th of October, 1904, was a fine example of a rapid move of the reserves of an army to a threatened point, a move which, owing to the distance, would not have been possible with a reserve composed of infantry; Prince Kanin's dashing piece of work at Penchiho the next day was a fitting sequel and an example of the powers of cavalry accompanied by machine guns when properly used.

The prompt taking of the opportunity of a gap opening between the armies of General Kaulbars and General Bilderling on March 9th, 1905, during the battle of Mukden by the Japanese is another good instance of the best use of cavalry. This decisive stroke would have been impossible with slow moving infantry. As it was, the cavalry, pushing through the gap with their artillery, converted an ordinary retreat into a disaster for the Russians.

Such are the opportunities which will render the role of cavalry, when properly used and properly armed, of immense importance on the battlefields of the future.

In "Modern Strategy," by Colonel James, we find the following paragraph:—"The vital necessity to the complex modern army of its communications renders it more than ever sensitive to any attempt to interrupt them." This operation of threatening communications is commonly known as a "raid," and brings us to the third important role of mounted troops in modern warfare. The truth of this saying was fully borne out in the war in Manchuria and with an active cavalry on either side it was a foregone conclusion that such attempt would be made. Here was a branch of war at which the Russian Cavalry was sure to excel; well mounted and with dashing leaders, their possibilities in this direction were considered infinite; and yet once more we have nothing to chronicle on their part but failures.

Raids they certainly made, which lacked nothing in energy, dash and daring; well planned and ably carried out to a certain point yet always doomed to failure because at the critical moment the cavalry was unable to fight infantry for lack of the necessary weapons and training.

The first Russian raid occurred early in the war and up to a certain point was fully favored by fortune. The town of Anju in Korea, on the line of communication of the 1st Army under Kuroki had, owing to the fact that the line of communication was in the act of being changed, been left with a garrison of only 70 reservists. On May 10th Colonel Matoriroff with 500 Cossacks swooped down on the town. Owing, however, to his men not being able to fight as infantry, he was unable to force an entry, and, after allowing reinforcements to enter, was eventually driven off by a total force of Japanese Infantry in numbers equal to about one-third of his command.

General Mischenko's raid from Mukden in January, 1905, on the Japanese communication around their left flank is a very similar instance only on a much larger scale. General Mischenko with 5,000 cavalry and horse artillery crossed the Hunho on January 8th and moved round the Japanese left. Everything went smoothly at first; on the 11th the railway was struck near Haichong and considerable damage was done. On the 12th, however, 1,000 Japanese entrenched in the station of Yinku were attacked. The attack failed for want of howitzers and infantry rifles, and Mischenko had to hastily retire, having accomplished little, from a position in which a success would have had far-reaching results.

Contrast this last example with the successful action of the Japanese Cavalry under General Akiyama during the battle of Mukden. Strengthened by 1,000 infantry, and accompanied by machine guns and artillery, General Akiyama with 40 squadrons left the Hunho on the 1st of March and succeeded in getting round the Russian right. Continually outflanking the enemy and driving them back, he reached the railway on the 9th, capturing large quantities of stores and ammunition.

With this example of the correct use of cavalry we shall leave this branch of the service, and proceed to discuss the tactical lessons of the war which deal with infantry.

INFANTRY.

Though the Russo-Japanese War was essentially an infantry war, the new lessons from a purely infantry point of view are not so pronounced as those dealing with the other arms. This is largely due to our South African experience coming immediately before, most of the infantry lessons of that war being fully confirmed by the course of events in Manchuria. When, however, in spite of the lessons of all large campaigns since 1866, we find the Russian infantry in 1904 entering a war with such obsolete practices as volley firing, and with a marked preference for the bayonet to the bullet even at 500 yard range, it will perhaps be not altogether vain to repeat some of the lessons of former wars which are borne out by the present campaign.

While on the subject of the bullet, too much stress cannot be laid on the necessity of marksmanship. All reports from the

seat of war agree on this subject.

The marksmanship of the Russian infantry was worse than poor. Hence not only the remarkable difference in the casualty returns of the two combatants throughout the war, but herein also lies the explanation of how it was possible for these Russians to be again and again turned out of prepared positions. It has been said over and over again that if the Russian shooting had been even moderately good (at Mukden after a year's fighting) the Japanese attacks over the open would have resulted in a disaster.

The Japanese marksmanship was by no means perfect (according to some, not even good at times), but compared to that of the Russians it showed up most favorably, and went a long way towards the building up of the long list of Japanese successes.

We rightly pride ourselves on the marksmanship of our standing army, especially in India; and with our large annual expenditure of ammunition, our great opportunities for firing off the range, and the general keenness of officers in this branch of training, it is probably not going too far to say that we are most likely a good deal in front of most armies in the respect; but such is the paramount importance of good marksmanship in a soldier nowadays that we might even go a step further, which our voluntary system of recruiting would enable us to do, and refuse to keep men who are, at any rate, not average shots. Every company or double company commander could name three or four men at least in his command who are really poor shots, to pass whom through the necessary standards entails a large expenditure of ammunition every year. These men a Commanding Officer should be able to get rid of automatically, irrespective of their length of service, under some such clause as "unable to maintain a proper musketry efficiency," just as at present he can get rid of a man under three years' service as "unlikely to become an efficient soldier."

The question of the infantry advance to the attack was by far the most important one to which infantry officers looked for an answer in the war. Had we overdone things since the Boer War? and would our loose extensions lack the driving force necessary to the successful attack, which was the opinion of the continental nations? The answer is very clear. The Japanese entered the war with the German formations. Immediately after the first battle (Yalu) Sir Ian Hamilton finds them practicing very much looser formations. A month later (June 15th) we find the Division Commanders empowered to double the drill book intervals. At the battle of Chaotao (July 18th), the German formations are being discarded and our own South African formations being adopted. At the Yoshirei Pass (July 31st), the formation of the firing line, as described by Sir Ian Hamilton, was very loose, and from thence onward we find loose formations everywhere adopted by the Japanese.

The Russians, on the other hand, favored close formation and paid the full penalty throughout the war. The same authority quoted above, in describing the battle of the Motienling Pass, states that "the closeness of the Russian formations left nothing to be desired from the Japanese point of view"; and these dense formations were responsible for the disproportionably large Russian losses as compared to those of the Japanese, in this as in nearly all the other battles of the war.

To take one more instance, we find at the battle of the Shaho the magnificent effort of the Russians to capture Penchiho on the Japanese extreme right on October 12th was completely spoilt by the unsuitability of their dense formation against the deployed line of the Japanese. The Russians advanded in battalion quarter column trusting to the bayonet, with the inevitable result of such tactics against modern rifles. Not only, therefore, do we find that the wide extensions of South Africa are absolutely necessary in the advance under fire, but we find the Japanese in the later stages of the war going even further and sacrificing the even lines of the start of the attack to the necessity of wide extensions and use of cover; the various groups rushing pell mell at full speed and for marvelously long stretches after their leaders in irregular swarms to the next halting place, which may be considerably out of the direct line if better cover exist on either side; group leaders being responsible for the general direction, and ultimate direct attack on the objective. This is undoubtedly the best way of getting over open ground, but requires careful training in peace time.

Another point accentuated by this war is the importance of the entrenching tool in the attack. The Japanese may be said to have reduced the use of the spade in the attack to a fine art. Ground gained in the attack was never relinquished. In some cases the firing line sank into the ground like moles, digging themselves in under fire; but generally, owing to the deadly nature of modern fire, the advance was made under cover of darkness, the firing line being entrenched in their new line by daybreak, and the supports or reserves moved up to the line of trenches vacated by the firing line. Infantry must be provided with a suitable entrenching tool and instructed in its use, not only standing, but while lying prone.

The tactical importance of fire discipline which controls the expenditure of ammunition and so helps to solve the knotty question of supply, is another lesson of the war. In fact, fire discipline combined with good marksmanship would practically solve the question and at the same time render the attaining of the fire mastery without which the final assault is impossible. A question which is not yet properly solved is that of firing during the night. The experiences of the war certainly show

that, as far as the attacker is concerned, the less firing the better, trust being put to the bayonet; but as regards the defender, opinions seem to differ as to whether fire should be opened as soon as the attack is detected, or whether it should be reserved until the attackers are close to the trenches.

These are the most important lessons which deal with infantry alone and we now come to our last heading, under which we shall discuss those lessons affecting the tactics of an army in general.

GENERAL.

The importance of a definite plan whether it be the plan for a whole campaign or only the tactical plan of operations for a single battle, has always been so obvious that we had scarcely put it down amongst the lessons of the war. In this war, as in all others wars that have ever been, we continually come upon instances of the want of definite plans-troops disheartened by marching and counter-marching—reserves out of place at the critical moment or previously frittered away in aimless fashion -without striking new ground, but on the other hand we can learn much from the Japanese in the carrying out of plans when made-first the impenetrable secrecy with which the plan is guarded, next the generous co-operation of all ranks in the carrving out, and, lastly, the unalterable determination with which it is carried out regardless of cost. In the relentless spirit of "no surrender." too, the Japanese have set a high example to the older nations.

The tactical point most emphasized by the war, however, is the overwhelming value of the offensive. It may now be laid down as an unfailing axiom that to persist in the defensive role is to commit tactical suicide. The Russians, for reasons of their own, chief of which, we must presume, were want of confidence in their generals, their staffs, and the shooting of their troops in the open, persistently accepted the defensive role, with the result that they were never within reasonable reach of any important tactical success. The powers of the modern rifle have rendered impossible the old time counter-attack by which the defensive was turned into the offensive. The immense frontage of the modern battlefield which renders it exceedingly difficult

to move reserves in time to a threatened point confers an additional advantage to the attackers, who, having the initiative, can decide at what point along the battlefield, or behind which flank, the issue of the day will be decided.

This difficulty in getting reserves up to a critical point in time, combined with the difficulty of piercing the center of a modern line of battle against modern arms, greatly increased the importance of turning movements, and consequently tended. as the war proceeded, to materially alter the normal position of the reserve both in the offensive and defensive to the flanks instead of the center. This naturally conferred an additional advantage to the attackers, who could mass their reserves towards whichever flank from which they intended the chief turning movement to be attempted; whereas the defenders had to be prepared for eventualities on either flank. Before leaving the subject of turning movements we must notice another point brought forward by the war. The containing powers of infantry nowadays are very great under any circumstances, owing to the precision, long range and rapidity of fire of modern rifles, but in hilly country these containing powers are enormously increased, and as a general rule the war has proved for this reason that the decisive stroke on an enemy's flank should not, if the choice exists, be made on a flank resting amongst mountains.

Night operations in the Russo-Japanese War may be divided into two distinct classes, the first the night march culminating in an attack during the night or at dawn, the second merely an advance by night with the intention of gaining ground swept by artillery or rifle fire under cover of darkness. In this latter case the troops started digging themselves in at or just before dawn, so that they were under cover by daylight. Owing to the accuracy of fire this soon became the usual form of advance on a position, and as this is bound to be the same in future wars, this operation should be extensively practiced in peace time.

An interesting point occurs in connection with night operations. As the war progresses we find the Japanese in selecting positions to resist night attacks coming round more and more to the opinion formed by us on South African experiences, that it is better to place the defenders at night a short distance back from the crest line, so as to get the attackers against the sky line, even though a more extensive field of fire is thus sacrificed.

Space forbids us to deal in this essay with the subject of the various tactical aids to both offense and defense. The placing of obstacles, the necessity of well sited and well constructed trenches, with loopholes and head cover, the use of hand grenades, light railways, visual signaling and the many devices used to give concealment, both to works and to movements of troops, are all points, the importance of which are fully brought out again and again during the war. Visual signaling was little used by either side, but the opportunities for its successful use were many, especially in the mountainous country traversed by the 1st army on the right; and a good signaling equipment must have saved General Kuroki many anxious moments, besides insuring co-operation, not only between his own divisions, but between his army and the armies on his left as they drew together in front of Liao-yang. This essay has, however, long passed the limits intended, and it is time to bring it to an end. In conclusion, therefore, we would point out that in the race of nations to prepare their armies for the new conditions of a modern campaign, the British Army starts with a generous handicap. The lessons so painfully learned by our army in South Africa have almost without exception been proved to apply to all circumstances of modern warfare. And these conditions of modern warfare are peculiarly favorable to our armies. comparatively long term for which we enlist our men under the voluntary system should enable us to give our troops the high training now required. Numbers no longer count as much as efficiency. We know our men will fight in the extended order rendered necessary by the precision and rapidity of modern fire. Well led, well trained and every man a good shot, there would be little fear to our army in a conflict under modern conditions even with a nation whose forces greatly outnumber our own.

THE CHARGE OF THE CUIRASSIERS AT MORSBRONN.*

(BATTLE OF WOERTH, August 6, 1870.)

By Major IMMANUEL.

A T the present day many authorities deny the possibility of success of cavalry in battle against infantry or artillery and base their reasons as a rule on the extended attacks of the French cavalry in the introductory battles of the Franco-Prussian War of 1870-71. The charge of the Cuirassier Division Bonnemain at Elsasshausen, at the decisive moment of the battle of Woerth, was executed with such a small degree of unity that non-success was a foregone conclusion.

The attempt of the cavalry masses of Galiffet and Marguerite to break through the lines at Sedan was more in the nature of a forlors hope than in the nature of a well planned tactical performance, so that it is futile to cite that as an instructive case. But the attack of General Michel's Brigade on the French southern wing in the battle of Woerth deserves more consideration. That attack was ridden under the most unfavorable conditions, i. e., in a very difficult terrain, and shows exceedingly grave errors or faults in its inception as well as in its execution. If, however, it is true that we learn most in the consideration of errors of commission and of omission, then this attack deserves our especial attention, the more so as it was executed in a situation, which not only justified but compelled the interference of the cavalry to relieve the other arms. That ride of the "Cuirassiers dits des Morsbronne" is celebrated in song and legend. Friend and enemy have wondered at the devotion to duty of the brave troopers and their willingness to sacrifice themselves. Only a very careful investigation during later years have made clear the details of the charge and almost solved the contradictory reports connected with the course of the charge and its results. It is our intention in this paper to

^{*}Translated from "Kavalleristische Monatshefte," by M. S. E. Harry Bell, Army Service Schools Detachment.

shortly discuss the cavalry charge at Morsbronn from the standpoint of present day views and to draw lessons therefrom for the present and for the future.

Since noon the right (south) French wing had been gradually forced back by the Prussian XI Army Corps. The Prussians had taken Morsbronn and the Albrechthausen Hof-of course, only after a severe and protracted battle. About 1 p. m. the French Division, commanded by General Lartique, which was weak from the start, found itself in a very grave situation. Parts of the division still held the southern edge of the Niederwald (forest) opposite the Albrechthausen Hof, while the other parts retreated through the village of Eberbach into the forest on the right wing of the division. The Prussians concentrated in mass at the Albrechthausen Hof; other masses, the 32d and 94th regiments, were executing an enveloping movement via Morsbronn with the intention of catching and holding the debris of General Lartigue's division. The three batteries of the division had been silenced by the superior Prussian artillery on the heights of Gunstett and had retired. The division was in imminent danger of annihilation within a very short time. Should this happen, the immediate loss of the southern part of the Niederwald to the French would have been unavoidable, and the division could not have retreated, and what is of more importance, the center of the French position at Elsasshausen would have been in great danger. General Lartique had absolutely no reserves left.

In his extremity he turned to the only remaining troops, which were still in close order and uninjured on the right wing behind the infantry, namely, the cavalry division under General Duhesme. According to the "ordre de bataille," that division was composed of 28 squadrons, but the division commander had but nine of these, hardly one-third of the total force. The first brigade had been detached for service with the Infantry-Division Pelle; of the second brigade the 10th Dragoon regiment had not yet reached the seat of war; the 2nd Lancers were with the Cavalry Division Bonnemain; the fourth and fifth squadrons of the 6th Lancers were in Hagenau to cover the detrainment there of the first arriving infantry division of the VII Corps. The division commander consequently had at his disposal the

first and third squadrons of the 6th Lancers and the 3d (Cuirassier) brigade, commanded by General Michel. That brigade was composed of seven squadrons, four of the 8th and three of the 9th Cuirassiers. This gave the division commander a force of but 1,000 or 1,100 troopers and that in a situation which required the utilization of all possible forces to the last man.

The assembled parts of the cavalry division were, dismounted, behind Lartique's division in the meadows immediately east of Eberbach and north of the Eberbach-Gunstett road, facing east towards Gunstett, and were covered from sight and from the enemy's fire by a flat hill; the 8th Cuirassiers were in the first, the 9th and the Lancers in the second line, all in column of regiments. General Duhesme himself had been in poor health since the beginning of the campaign and could neither mount his horse nor lead his troops in person. It was just a few minutes before one o'clock when the general staff officer of Lartigue's division, Colonel d'Andigne, brought to General Duhesme the request of General Lartigue "to attack with one regiment the Prussian infantry leaving Morsbronn"a request which, according to a cavalryman's view, was entirely wrong. The force designated was insufficient, for if we once decide on using the disposable cavalry, then cach and every trooper should be utilized in the charge. General Duhesme considered the task impracticable and of no use and replied: "For heaven's sake, tell General Lartigue that he is about to commit a very mad act (une folie) and will cause my cuirassiers to be annihilated to no purpose." Andigne replied: "There is nothing else left for General Lartigue to do in order to save the remnants of his division from entire annihilation. Ask your men yourself if they are willing to see such an event happen without holding out a helping hand. For myself, my only regret is that I can not charge with you." After that Duhesme acquiesced, saying only, "Mes pauvres cuirassiers," shook Colonel d'Antigne's hand and gave orders for the 8th Cuirassiers to start. But the brigade commander, General Michel, was of a different and better opinion; he decided to make the attack with the entire brigade and in addition to take along the Lancers. "I had not the slightest doubt," wrote General Michel in his official report, "that our losses would be immense, but I made up

my mind that we would have to sacrifice ourselves in order to save our comrades." A very proper cavalry spirit! The general and his brigade did sacrifice themselves!

A few minutes after one o'clock the brigade started on a trot; the 9th Cuirassiers in the lead, followed by the 8th; the Lancers being in the third line. The three regiments were in one line, an exceedingly dangerous formation, as the direction of the attack was not vet decided, neither could the formation of the enemy be seen. It had the most unfortunate consequences. The brigade reached the crest of hill 756 without opposition. Here General Lartigue had halted and indicated to General Michel, who had galloped in hot haste ahead of his command, the hill of Morsbronn in his front. To the left, behind the eastern slope of that hill, the most northern house of Morsbronn could just be seen; a little farther to the right hostile skirmish lines could be seen advancing through the open, the second and fourth battalions of the 32d Infantry. General Lartigue, who knew the lav of the land and the enemy's dispositions to some extent, advised the brigade commander to ride not against the front, but against the left flank of the Prussian infantry, that is, to leave hill 756 on the left (east) and to proceed through the Eberbach bottom to the south and to debouch to the east for the charge when on a line with Morsbronn.

It is clear that this advice was good from a general tactical as well as a cavalryman's standpoint; in this manner the brigade could have attacked under cover the enemy's flank and would have had open terrain for the attack. But it now appeared that the formation of the brigade made a change of front exceedingly difficult, and in addition General Michel did not clearly grasp General Lartigue's directions in the confusion of the moment, and took as objective for his attack the skirmish line on the northern edge of Morsbronn, which was then the only portion of the enemy's force visible. At just this time the left flank of the 8th Cuirassiers was overwhelmed by the rapid fire, poured into it by skirmishers of the 80th and 95th Regiments, which up to now had been invisible to the French troopers. These skirmishers had assembled in Albrechtshausen Hof and when the Cuirassiers started, threw themselves into

the ditches alongside the road and fired on the approaching cavalry at a range of less than 450 yards.

The two circumstances, i. e., the erroneous direction of the attack and the fire coming from the left, led General Michel to the decision to debouch to the right with the entire brigade and to charge the enemy in his immediate front. This decision led to an inconvenient and time-consuming change of front, and that under a galling infantry fire. The brigade encountered furthermore an exceedingly difficult terrain—on its left was a deep defile, in its front ditches, cuts, trees and hop gardens, full of barbed wire and constituting a serious obstacle.

The French cavalry has been blamed for not reconnoitering the terrain over which the attack was made, and justly and the fault must be laid at the door of division, as well as brigade and regimental commanders. There had been hours in which patrols could have been sent out to reconnoiter; nothing was done in that line, although it must have been perfectly plain that an interference was becoming more and more necessary the more unfavorable or precarious the situation of General Lartigue's division became. Even during the attack there were no scouts out in front; all eyewitnesses corroborate that only General Michel and the commander of the 8th Cuirassiers, Colonel Guyot de la Rochere, were in front, brave and spirited, it is true, but under a misconception of the situation. And in this manner the squadrons rode to destruction!

The turn to the right of the 8th Cuirassier Regiment miscarried entirely; on its right were woods and hop gardens and a destructive rapid fire was poured into it from the left. The squadrons broke into columns of troops and in that formation galloped faster and ever faster to the northern entrance of Morsbronn and right into a half-circle of Prussian skirmishers, and this circle closed on the attacking cuirassiers. With enormous losses parts of the regiment passed the 2d battalion of the 32d Infantry at point blank range, took the direction towards Duerrenbach and on the way were fired on again by the 9th and 12th companies of the 80th Infantry; other remnants of the regiment lost themselves in the country. Some of the cuirassiers rode even as far as Strassburg; riderless horses, blood and foam covered, were captured in villages miles from the scene of disaster. Parts of the regiment faced about and rode westward along the northern edge of the village from where the 2d battalion of the 32d Infantry poured a destructive fire into the squads of fugitives. The 1st and 3d squadrons entered Morsbronn, possibly to seek shelter from the fire behind the houses, and possibly also because their horses had become unmanageable and blindly ran into the village. "But a destructive fire met us coming from the houses." says the history of the 8th Cuirassiers, "we encountered a barricade closing up the narrow street. We were compelled to face about. Every one of the troopers either fell or was captured." And so miscarried the charge of the 8th Cuirassiers.

The 9th Cuirassiers were not more fortunate. To make the change of front, the regiment had formed troop columns; two columns deployed, the third rode in close order. terrain over which it had to attack was not so bad as that over which the 8th Cuirassiers charged, but the rapid fire of the Prussians had a more telling effect on them. The main mass of the regiment galloped around Morsbronn, losing heavily; single groups went through the gardens on the northern edge of the village right up to the muzzles of the rifles of the skirmishers of the 32d and 94th Infantry in position there. A large part of the regiment entered the village from the south. While most of that party succeeded in again leaving the village and seeking safety in the open, many were delayed by the dead of the 8th Cuirassiers blocking the street, and all those were killed by the fire from the houses, barns and gardens. Finally the village street was completely blocked with dead and wounded troopers and horses. All those troopers, who succeeded in escaping either death or capture, fled in the direction of Hegeny.

The two Lancer squadrons formed the third line in the attack, but shared the same fate as the Cuirassiers. The remnant of that regiment went partly east and partly west of Morsbronn, some few going through the village; the survivors followed the 9th Cuirassiers to the south.

The entire bloody spectacle was over in less than a quarter of an hour. The survivors of the three regiments concentrated near Hegeny and established some kind of order. It was their intention, instead of riding around the far reaching flank of the enemy, to try and rejoin the French army by going close to Morsbronn and they did so; but the enemy's reserves (supports) were still at that place and captured nearly all of the troopers that were not killed at the first fire, and but very few escaped. An unusual event occurred here; the 6th Company of the 94th Infantry charged with the bayonet a detachment of French Cuirassiers who had made a stand behind a barricade of dead horses and defended themselves with their pistols. "All troopers which did not immediately surrender were bayoneted."

Another small detachment of Cuirassiers taking the direction from Hegeny to Fortsheim encountered in the vicinity of the latter village three squadrons of German hussars, which formed the extreme left wing of the 22d Division. The hussars attacked the remnants of the French cavalry and dispersed them. Up to 2 o'clock at night several remnants of the French cavalry rode around the vicinity of Morsbronn, trying to break through the German troops and join their army. Only a very few of them were successful in this.

Reports of casualties of the French brigade differ widely. As a matter of fact but seven officers and fifteen troopers of the 9th Cuirassiers and three officers and 52 troopers of the Lancers returned to MacMahon's army. The total loss of the 9 squadrons was 63 officers and 780 troopers, of whom about 300 unwounded or only slightly wounded were captured. Taken all in all, the brigade was absolutely annihilated. The loss on the German side was slight. But few men were wounded by saber cuts or by the hoofs of the chargers, for the French cavalry did not strike the German infantry en masse, but individually. The only organization which lost considerably in the melée with the Cuirassiers was the 13th Hussar regiment, their loss being 24 men and 35 horses.

The question is, did the sacrifice of an entire cavalry brigade justify the results attained? As a matter of fact, the advance of the Prussian left wing was delayed 35 or 40 minutes thereby—that is, it took that long until the main body of that wing could again take up the forward movement, but not only on account of this cavalry charge, but also because the left wing of General Lartigue's Infantry utilized the time

gained by the charge, to make a counter attack from the Niederwald towards the Albrechtshausen Hof, to gain a breathing spell for a retreat.

So it happened that while General Michel's brigade went to pieces, the right wing of the Lartigue's Division escaped into the Niederwald and, being but weakly pursued, was enabled to retreat to Reichshofen. It is a fact, however, that it was impossible in any case to save the day for the French. The far superior leadership on the German side, the high tactical and moral worth of the German troops, their bravery and eagerness to attack, as well as their numerical superiority, all these considerations were instrumental in keeping victory perched on their banners. If General Michel's brigade had not sacrificed itself, it is more than probable that General Lartigue's Division would have been so badly defeated at Morsbronn-Eberbach, that its fighting powers would have been at an end. It is also true that the French defeat could hardly have been worse.

Another question: Could the brigade of General Michel have had better success in having chosen a different direction of attack, say by advancing against the *left* flank of the German Infantry wing, without having had to sacrifice itself completely? This question we answer in the affirmative, and that emphatically. We give General Michel's brigade all due credit for its bravery and intrepidity, the victor only honors himself by giving this credit. But nevertheless we cannot help but emphasize the low degree of tactical ability of the French cavalry. It is true it was opposed by an infantry which received the cavalry charge with composure and in security and repelled it as a mere matter of course worthy of emulation. When opposed by *such* an infantry, even a better planned attack would not have had better success, and possibly nothing more might have been gained except a little more time.

The charge of General Michel's brigade is often likened to that of Bredow's charge at Vionville. Both have been named the "death ride." But what a difference in the two! At Vionville five and three-fourth squadrons charged in excellent order and in compact mass through several batteries and two lines of infantry and then turned about to ride down the hostile cavalry masses who attempted to block their road. The

brigade of General Bredow sacrificed two-thirds of its number, but was successful in so far that the enemy abandoned his advance and took up a waiting position. In this case there was a definite and decided success. It was otherwise in the case of General Michel's brigade. It started with nine squadrons and lost over four-fifths of its strength; it succeeded in causing but a very short delay to the enemy without stopping him. As already stated, however, the morale of the German Infantry as compared with that of the French, was a decisive factor. The German infantry remained unshaken, but not so with the French. The same applies to the German cavalry; it was better drilled tactically and was better in every way in the field than the French cavalry.

It is unquestionably true that the entire French cavalry ought to have been with the south wing of the army on August 6, 1870; on that wing lay its task. In place of nine squadrons, two entire cavalry divisions at war strength with a few horse batteries should have been at hand, instead of being scattered behind the entire battle front and coming scattered into action. Their mere appearance, even if not decisive, would have had a far different effect on the enemy than the nine squadrons, provided of course that there had been decided and quick action.

The question now is: Would a cavalry leader of today, in a similar situation, act as did General Michel? Might he not decline the responsibility for the attack with the excuse that the use of cavalry in action in that manner is a thing of the past? Each and every battle situation offers a new and peculiar phase and makes special demands on the force of decision and will power of the leader and on his willingness to take responsibility. And this is especially so in the case of a cavalry leader. He must never wait to be called or urged, else the valuable moment for action is lost. Of course, he must carefully weigh his decision, and whether or not he shall lead his troops to a charge on the death-dealing skirmish lines. He should always have in mind the sentences in our cavalry drill regulations: "A use of the cavalry, regardless of consequences, may be required to offer resistance to a pursuing enemy in case of an unavoidable retreat. A short breathing spell, which can thereby be gained for the army, may be sufficient to avoid a catastrophe, and to the cavalry which does this, even if not entirely successful, will remain the honor of the day." The progress made in our cavalry arm has changed nothing in this respect and cannot do so.

Consequently the cavalry leader of today will lead his troops to the charge, of course with different organization, in different formation, and in a different direction than was done at Morsbronn. Even then if the cavalry does not succeed, it has done its duty.

CAVALRY IN THE RUSSO-JAPANESE WAR.*

By Captain R. S. HAMIL'TON GRACE, p. s. c., Thirteenth Hussars.

THE achievements of Cavalry during the Russo-Japanese War were not of that magnitude which the strength in mounted troops, possessed by at least one of the belligerents, would have led us to expect.

This fact has been seized on by the opponents of Cavalry to enunciate the formula that "the part Cavalry play on the stage of modern war is necessarily small, owing to its inherent defects as an instrument under modern conditions."

In the opinion of these people Cavalry must be replaced by Mounted Infantry. Yet how illogical is their argument is shown by the fact that in 1901 Colonel Picard wrote: "La cavalerie russe est donc de toutes les cavaleries curopéennes, celle qui se rapproche le plus de l'idée de transformation en infanterie montée." The dictum of these critics being obviously false, let us inquire whether the small results attained by the Cavalry in Manchuria were not due to abnormal conditions and to the neglect of lessons expounded by great leaders.

The duties of Cavalry may be divided into:-

- 1. The acquisition of information.
- 2. The prevention of information.
- 3. Strategic delay.
- 4. Raids.
- 5. Battle action.

^{*}From the Cavalry Journal (British) of April, 1910.

I. ACQUISITION OF INFORMATION.

The vital necessity of information to a commander is obvious: it has been the foremost care of every great commander. Before commencing the 1815 and 1870 campaigns, Napoleon and Moltke flooded the enemy's country with spies, and these spies were backed up by Cavalry, for, once the fighting begins, the information from spies becomes uncertain. Lee's Cavalry in 1862 working in a friendly country gave him excellent information. A system of espionage organized before war, combined with Cavalry reconnaissance, is the best method of gaining information.

The Japanese followed this system, the Russians did not; they omitted to prepare before the war and asked their Cavalry to perform impossibilities after hostilities had broken out.

Kuropatkin ascribed his failures as being largely due to the scanty and imperfect information that he received from his Cavalry.

In this matter of seeking and preventing information the war in Manchuria was somewhat abnormal.

The natural cunning of the Japanese, added to their facial resemblance with the Chinese, had enabled them to perfect before the war a system of espionage probably unrivaled in the history of war; in consequence the duty of their Cavalry was practically confined to prevention. The Cavalry in forming their screen were not forced to go far afield and could call in the assistance of both Infantry and Artillery. Hence there could be no Cavalry fight to decide the question of liberty of reconnaissance.'

The Japanese Cavalry had thus attained to a position without fighting which in a European war will not be reached without considerable losses. There were two courses open to the Russian Cavalry, either to split up into small parties and to attain their object by mobility or to remain in large masses and crash through the Japanese screen by fire action.

The Russians chose a middle course and failed. They did not mass and then break through by a determined dismounted attack, nor did they scatter and try to attain their object by mobility. They took the middle course, viz:, they scattered and then tried a half-hearted dismounted attack, and

were quite naturally stopped by the Japanese mixed screen. On February 27, i. e., one day after the commencement of the movement, the presence of a strong Japanese force was located at Tawan. Not only this advance but the preparation for it would have been discovered had the Russian Cavalry followed the example of Stuart and acted as Cavalry instead of Mounted Infantry.

Let us suppose the Japanese had been defeated and driven back. What would have happened?

The whole system of espionage would have been dislocated, spies would have been unable to get back, foreign agents would have been terrified, collecting stations for information would have to have been changed, and it is extremely probable that the Japanese leaders would have got very little information indeed from their spies.

If all this had happened, as might easily have been the case, how acutely would the want of a sufficient force of Cavalry have been felt—a Cavalry that could make certain of getting the necessary and vital information, and that could hold off the enemy's Cavalry from pursuit.

For gaining information Cavalry in its proper proportion is essential as ever; moreover it must be trained as Cavalry, otherwise it will not have the requisite mobility and dash to enable it to out maneuver and outfight the opposing Cavalry with whom it must sooner or later in its attempts to get information come into contact.

This *rôle* of gaining information is the most important which can fall to the lot of Cavalry, and it is one upon which the majority of our Cavalry at the outbreak of war will be employed. (The duty of preventing information being largely handed over to our Mounted Infantry.)

It is in this *rôle* and at this stage of the campaign that large bodies of hostile Cavalry are likely to be met with. The most essential function of the training of Cavalry is, therefore, to prepare it in the best way for the *rôle* of gaining information, and this training must have in view the probability of a combat against the enemy's Cavalry. If beaten in the action against the enemy's Cavalry it matters little how well

our Cavalry could have performed their other duties had a chance arisen.

There are, however, times when Cavalry must rely to a very large extent on fire action, and therefore the training of Cavalry to fight on foot, rifle in hand, is extremely necessary, and should not be neglected. Our Cavalry are enlisted for seven years' color service, while the majority of Continental nations have to train their Cavalry in three years or less. It should not, thererefore, be hard to train our men to such a state of efficiency that they can equal, if not surpass, Continental Cavalry in the mounted combat, as well as being able to fight on foot.

Especially is this fire action necessary when told off to delay the enemy, as Jackson's Cavalry delayed the enemy prior to and during the battles of CrossKeys and Port Republic, and as Benedek's Cavalry might have delayed the Crown Prince from arriving at Koniggratz, and as Grouchy's Cavalry might have done before Waterloo.

Modern firearms have increased this delaying power of Cavalry. Long range and rapidity of fire make it impossible to guess the delayer's strength, and the precision of the modern rifle makes a wrong guess costly. After the battle of Wafangkou, Samsonoff and his Cavalry delayed the enemy to such an extent that they only advanced thirty-five miles in twenty-three days. At Yentai, also, the delaying power of Cavalry was well shown.

When the Japanese on exterior lines were converging on Liaoyang there were occasions when this great power could have been used.

The American Civil War showed that a boldly led Cavalry, relying on speed and secrecy, can make raids against an enemy's communications with fair safety, even when the latter has Cavalry. When, however, there is little or no hostile Cavalry the raids can be made with perfect safety, for the enemy, unable to take the offensive, is chained to the defensive, and no commander can be crushed by purely defensive action. But to be effective a raid must be undertaken with a definite object at a suitable time.

On June 12, 1862, Stuart rode round the Federals; the main operations began on June 26. On August 23, 1862, Stuart, with 1,200 men, again rode round the Federals, covering some sixty miles in twenty-four hours; the main operations, e. g., Jackson's march, began on the 25th. On June 27, 1863, Stuart again raided, with some 1,500 men; he did not arrive back till July 2, and was not present at Gettysberg. The first of these raids destroyed a certain amount of material and gained information, the second drew off the Federal troops at the critical moment, the third left Lee in ignorance and without Cavalry for the battle. We therefore see that a raid should be undertaken just before the battle, that the troops should return for the battle, that numbers should be limited, secrecy maintained, and trust placed in speed rather than in fighting.

From mid-December the Japanese had known of Mischenko's proposed raid and had made their preparations. On January 8, Mischenko, a gunner by trade, started. His column consisted of 10,000 men, 1,500 beasts for food. 22 guns, and some Mounted Infantry. His average march was 45 versts a day, and the next main operations did not begin till January 26. When lessons of the past are thus disregarded, lack of success must be put down to the bad workman rather than his tool.

On January 15 the Japanese despatched two patrols of 200 men each. Making a long detour, these were able to blow up a bridge 160 miles north of Mukden; as a result the whole division of Don Cossacks and two brigades of Infantry were absent from the battle of Mukden.

Since the Russo-Japanese War the *rôle* of Cavalry on the battlefield is deemed by some to be past; but before coming to so momentous a conclusion let us see whether by judicious handling the Cavalry might not have been able to reap greater results than they did.

At Waterloo and Quatre Bras it was shown that Cavalry applied frontally and without surprise against unbroken Infantry were of little avail. The same lesson was proven in 1862, 1866, 1870. Lingy showed the effect of Cavalry against tired Infantry, Waterloo its effect in pursuit, Koniggratz its effect as an antidote to the pursuit.

The campaign of 1870 showed that these duties were still possible if the element of surprise was present, the right moment chosen, and the Cavalry well led. During the course of the American Civil War, a type of Cavalry was evolved that could charge as Cavalry, delay as Mounted Infantry, or fight on foot as Infantry. If the lessons of the past had been learnt, and the right type of Cavalry evolved, could not it have been of use on the battlefields of Manchuria, or have modern conditions eliminated it from the battlefield altogether? Could not something have been done besides merely locating the enemy's movements as the Russian Cavalry did at Wafangkou, Liaoyang and Mukden? Was there no opportunity for delaying tactics for the Russians, or would a strong Japanese Cavalry have been useless for getting information and for pursuing the enemy after Shaho, Mukden, Liaoyang, etc.?

The Japanese Cavalry failed on account of numbers. The failure of the Russian Cavalry was partly due to their leaders and want of dash, partly due to the way they were scattered without method throughout the Army. They were trained as Mounted Infantry and used as Mounted Infantry, i. c., dispersed and wedged into the fronts of strongly fortified battlefields—used in the hills when the vast plains in the west lay

open.

At Wafangkou the Russian Cavalry could have delayed the Japanese turning movement and taken it in flank. The fire of the Japanese Cavalry effectually broke up the Russian counter-attack.

At Liaoyang the Cavalry was scattered: Samsonoff on the right, Grekoff in rear of the centre, Rennenkampf on the left. On August 31 between 7 and 8 p. m., the attack of the last reserves of the Second and Fourth Japanese Armies on the works south of Liaoyang had failed, and after untold hardships and losses the Japanese had to fall back. Surely this was an opportunity for a Cavalry massed on the Russian right, but they were scattered, were not available, and had not the man at their head to seize the psychological moment. On August 28, Samsonoff's Cossacks, nineteen sotnias, were not enough to stop the Japanese turning movement. On August 30 Rennenkampf's Cossacks did nothing to stop the Japanese turning movement

round the Russian left. September 2, Samsonoff held back Kuroki, and when Kuropatkin decided to retire, the Cossacks of Mischenko, connecting the 2nd and 4th Siberian and 17th European Corps, for two days prevented the Japanese from breaking the line, while Rennenkampf prevented the turning movement round the left. No pursuit owing to insufficient Japanese Cavalry: result, another fight at the Shaho.

At the Shaho the Cavalry were again scattered. Grekoff, with twenty-two sotnias, on the right; Mischenko, with sixteen sotnias, in the centre; and Rennenkampf, with fifteen, on the left. On October 12 and 13, Mischenko stopped Kuroki's turning movement.

On October 12 Prince Kanin and his Cavalry saved the Japanese right wing from a perilous position at Ponsiho. In spite of the Cavalry having to work in the mountains, twenty-four squadrons, backed by sixteen battalions, managed to place themselves on the communications of the First Japanese Army. Had the Russian Cavalry been massed on the right it is quite open to question whether the advance of the Japanese left would have been here possible. No pursuit owing to insufficient Japanese Cavalry: result, another fight at Mukden.

At Mukden we once more find the Russian Cavalry scattered. Out of 143 sotnias, ninety-one were distributed between Alexieff, Rennenkampf and Mischenko, and the remaining fifty-two were allotted seven per Army Corps.

This dispersion, coupled with the purely defensive spirit inculcated by the Russian command and the Mounted Infantry training given to the Russian Cavalry, led, as might be expected, to a purely passive, spiritless, dismounted defensive.

A great Cavalry mass acting on the right flank, outflanking the turning movement of Nogi's army, would have had, at least, great, if not decisive, results on the future of the war.

At this battle the Japanese felt the want of Cavalry most keenly. All the elaborate moves of Kawamura and Kuroki were necessary, owing to the want of a Cavalry screen, in order to deceive the Russians.

On March 2 the Cavalry of the Second Japanese Army was placed at Pan Chiatai to fill a gap in the line of the Third Army. The rest of the Cavalry were rightly employed in

screening Nogi's march and eventually placing itself across Kuropatkin's communications north of Mukden; but it was too weak to be of use. The Russian Cavalry did practically nothing to stop this turning movement, and even allowed this small body of Japanese Cavalry to threaten the Russian line of communication. The mere presence of this body of Cavalry on the line of retreat indicates what would have been the result of a mass of Cavalry employed in a similar manner. Mukden would have been a battle of fruitful results, instead of a fight in which the victor was too exhausted to receive the laurels.

From the above it is hoped that it has been shown that in the late war it is not opportunities for Cavalry that have been wanting, but leaders and men to take them.

The lesson of the war is that Cavalry is as useful as ever, but that to obtain good results it must be trained in *morale*, placed under good leaders, and be used in its proper sphere, *i. e.*, to enable Cavalry to use its full power it must have room to move into action as well as in action. Its defensive power must be used to create offensive opportunities.

In fact, what is wanted is not Infantry turned into Cavalry, but horsemen trained to fight as Cavalry, imbued with the desire to get at the enemy, and trained to be good shots.

ON WRITING MILITARY HISTORY.*

BY CAPTAIN THE EARL PERCY.

THERE are many ways of writing military history to be of use to those who wish to study war. A mere catalogue of marches, a mere statement of the positions occupied by contending forces from day to day, may be of service when the strategical principles involved by the shapes of frontiers or geographical features in relation to armies are illustrated and explained by such an author as Hamley; but to de-

^{*} From The United Service Magazine for May, 1910.

scribe a campaign, adequately apportioning praise or blame to the various commanders, criticising their actions and stating the alternatives to them, requires not merely statements of facts, but a very careful consideration of all the conditions which governed those actions. This method, when combined with great military ability and enthusiasm for the subject in hand, has given the world such works, among others, as Houssaye's "1814" and "1815," Jomini's "Life of Napoleon," and Henderson's "Stonewall Jackson."

A very different method is observable in an article on "Mc-Clellan's Campaign on the Yorktown Peninsula," in this number of the United Service Magazine, and as it is typical of a style of writing military history which would appear to be of little value in gaining a real understanding of war, it may be worth while to note a few of the cardinal defects.

In the first place, a certain opinion seems to have been formed as to the lessons of the campaign; facts are then made to fit in with those preconceived views; the plans which the various generals should have followed in dealing with the strategical problems are then put before us without any regard to the difficulties, moral and physical; and last, but not least, a famous general, who has hitherto been regarded by most people as little short of a hero, is branded for his "unprecedented behavior" and "defection" at critical periods during the campaign.

With regard to the seven days' battles, the attempt has been made to show that Lee committed a grave error by what is termed his "inaction" on the 28th June, after the battle of Gaine's Mill; an alternative plan which is called "obvious" is then given, Lee's original plan is called "unsound," and Jackson's reputation as a man and a soldier is light-heartedly dismissed in a few words of denunciation.

Now all this may, of course, be the result of profound study and of careful thought, but for any impartial person who cares to follow the alternative plans and to read both sides of the question as regards Jackson, it is all strangely unconvincing, while the dogmatic tone adopted throughout is irritating, to say the least of it. To shirk the real problems involved by difficult situations in war is certainly not the way to write military history.

The real facts about the 28th of June are these: On the early morning of that day Lee was quite uncertain as to what his enemy's line of retreat would be. The fighting on the preceding day had been continued till long after nightfall, and the Federals had retired to the south side of the river under cover of darkness. The difficulties of the country were enormous, though in the article in question they are ignored altogether until the last page, and then described in such a way that we might imagine the valley of the Chickahominy to present much the same features as those of the Thames or the Seine. The cavalry, we are told by Lee, could only gain information by advancing along the regular roads, which were, of course, obstructed by barricades and broken bridges, and all lateral movement was out of the question. Under these circumstances a direct pursuit of the enemy would not provide great results; and besides, and this is a most important point. Lee believed that McClellan would recross the river by the railway and Bottom's bridges, or even lower down. He therefore despatched Ewell and Stuart's cavalry to reconnoitre down-stream and seize the bridges. No reports had come in from the south bank, which tended to show that McClellan had changed his line of communications and was retiring on the James River. The first indication appears to have been the dust raised by the Federal trains in the evening of the 28th; but it was not till 3:30 A. M. on the morning of the 29th that Lee received positive information from Magruder that the enemy's works were vacated. He then issued orders for a combined advance of the Confederate columns on the 29th.

Now, if anybody is prepared, after considering the problem in all its bearings, to say that Lee was wrong, he should at least bear in mind the following possibilities:

First.—McClellan, only one of whose corps had been beaten, might overwhelm Magruder and seize Richmond.

Second.—He might retire due south to some point on the James River.

Third.—He might recross the river and march either to White House or down the Peninsula to Yorktown or Fortress Monroe.

If Lee crossed to the south bank he would give McClellan an opportunity of regaining his original line of communications and his supplies at White House. If he advanced down the north bank, he increased Magruder's danger. He therefore waited until his enemy's designs should be disclosed, and when he discovered that he was retiring to the James, took measures which but for untoward accidents would have led to the total defeat of the Federal army. Considering the difficulty of obtaining information, and the fact that he was operating on both sides of a river against an enemy greatly superior in force concentrated on one bank, his action on the 28th would appear to be on the whole the best possible one to adopt.

Now let us consider the alternative plan propounded in the article and described as "obvious."

This consists in sending Jackson's corps on Saturday the 28th to cross at Bottom's bridge, Stuart to cross lower down, A. P. Hill and Longstreet to act as a general reserve to operate in aid of either Magruder on the right or Jackson on the left. This is a very pretty scheme, no doubt, and perhaps it has been carefully thought out and based on information not available to others. If we were only shown the process of reasoning, we might humbly acquiesce even if we were not convinced; but at the very outset so many difficulties stare us in the face that one is almost tempted to believe that the scheme was never intended for close scrutiny at all. In the first place, Lee says in his report, "Below (south of) the enemy's works the country was densely wooded and intersected by impassable swamps, at once concealing his movements and precluding reconnaissances except by the regular roads, all of which were strongly guarded. The bridges over the Chickahominy in rear of the enemy were destroyed and their reconstruction impracticable in the presence of his whole army and powerful batteries. He was therefore compelled to wait until his purpose should be developed." We read at the end of the article a strong condemnation of Mc-Clellan for not overwhelming Magruder on the 28th and 29th of June. But surely this result would have been achieved with much greater ease had the whole of Jackson's corps been left on the north bank engaged in the hopeless task of building a bridge and forcing the passage of a river in the teeth of an

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artillery greatly superior to his own, while the divisions of Longstreet and A. P. Hill are in the dilemma of being compelled either to leave Magruder to be crushed and go to the aid of Tackson in his almost impossible task, or to leave Jackson isolated and march to the assistance of Magruder, whom they will probably be too late to aid, as indeed they actually were. under much more favorable circumstances on the 29th. We know that Bottom's bridge had been destroyed; everything seems to show that it was commanded by powerful batteries, for we know by Lee's report that the bridges in rear were held, and from Magruder, that the works were fully manned on the evening of the 28th. Another little difficulty which must strike any one is, how were A. P. Hill and Longstreet to support either Jackson or Magruder? A glance at the map will show that the only points which would render this possible at all are Grapevine and New bridges. By remaining there they would be in a central position, it is true, but Grapevine bridge, which needed repairing, is about five miles from Bottom's bridge, and New bridge more than eight. So that Lee's inferior forces are to split themselves up into three practically isolated portions, on something like a fifteen-miles circumference, operating on both sides of a river, amid pathless swamps and thickets, against a superior force concentrated on one bank of the river! It may be all very well, but there are surely a few slight difficulties, and we should so much like to have a little more explanation!

It has been said above that facts recorded in the article are made to fit in with preconceived opinions. For instance, Magruder is described as being left to "struggle" alone against McClellan's flank guard on the 28th. This is misleading. Only one division, that of Jones, was engaged. It is true they lost about 400 men, but considering the numbers engaged, this action can hardly be called more than a skirmish. Besides which, Magruder's special duty was to hold the enemy in check until his designs should be disclosed. Had an attack in force been made upon him there would have been some reason for the phrase employed; but it is perfectly evident that Magruder, on his own showing, had no notion whether the Federals were retiring or not, and to give the impression that he was left in the lurch by Lee is absurd.

Again, we read of Lee having been subject to "a collapse of energy," and that commander is blamed for "the complete stagnation that supervened for forty-eight hours." What this may mean it is hard to say. If history must be written in this rather sketchy manner, the strictest accuracy is necessary in order to avoid misunderstanding. Now, the combined Confederate advance took place on the morning of the 29th. It is surely most misleading to apply the term "stagnation" to a day which was spent in hard marching by all the Confederate columns except perhaps one, and on which a hard-fought action took place at Savage Station, which, though it did not cost more men than the "struggle" of the preceding day, resulted in a repulse of the Southerners.

As regards Lee's original plan which is called "unsound," we are not favored with any alternative and "obvious" plan, except that we are told that "General Johnston chose the better part, with inferior forces effecting surprise and operating on inner lines against the Federal center." This criticism may be very valuable, but unless it can be shown that Lee could have done the same, it is rather unconvincing. The Federal center was strengthened by fieldworks, and unless a superior force gives its opponent an opportunity, by making wide outflanking or enveloping movements, to operate on inner lines against the center is hardly likely to be attended with success.

But when we turn to a work on the "War of Secession," by the same author, we are given a little more light on this point. In that we are told that "if Jackson had commanded on the right and Magruder on the left, if Longstreet's six brigades in a central position had been used as a general reserve, the Federals would have had to fear a double envelopment." The advantage of reversing the positions of Magruder and Jackson is only apparent if we adopt the view that Magruder's energy was greater than Jackson's. But even then, it is rather hard to take this sort of criticism seriously. Time is of some importance in war, and as Jackson was coming from the valley, the left flank was obviously the most suitable one for him to operate on. But how a double envelopment of a superior force by an inferior one operating in such country and separated by a river was to be effected, we are not told.

But it is refreshing to turn from this sort of solution of a strategical problem to that of a careful writer like General Alexander. His alternative plan for the 28th is really interesting. Leaving Magruder on the south bank, Lee, reinforced by Holmes' division, should march down the north bank of the Chickahominy by the good roads which run on that side, should cross the river at some point below the Federals and endeavor to intercept them on the Malvern heights. This scheme is risky; it leaves Magruder completely isolated, but it has at least the advantage of keeping the whole Confederate force on the north bank concentrated and operating in the most effective direction against the enemy. Had McClellan been cut off from his new base on the James River, his army demoralized and hampered by its long trains on the muddy roads, the result might have been a surrender of the whole force. It would at any rate be infinitely better than splitting up the attacking force into three detachments, each of which is liable to be beaten in detail.

As regards Jackson's reputation during this campaign, the whole question may be studied with profit both in the pages of Colonel Henderson and in those of General Alexander. Each of these writers takes a very different view from the other. Each is somewhat prejudiced Alexander undoubtedly so, as he writes from the point of view of one who held a high command in Longstreet's corps and believed that at any rate on one occasion that commander was left in the lurch by Jackson. The severest criticism is perhaps that of D. H. Hill, who says that pity for his men was a chief factor in his inaction at White Oak swamp on the 30th, and that in view of the exhausting work done by the valley troops, "he thought that the garrison of Richmond ought to bear the brunt of the fighting." Henderson's arguments are at any rate hard to refute. He points out that Jackson took the view that orders should be literally obeyed, and that, on the 30th, he had received explicit orders from Lee to guard the left flank. By remaining opposite the Federal position at White Oak swamp and making a demonstration, he was carrying out this duty by preventing them detaching a force to act against Longstreet. He also shows, and this was Jackson's own explanation, that Lee could easily have sent for him if he had required him.

Another accusation made against him and repeated in this article is that he remained in camp on the 29th. A part of Jackson's force did remain in camp while Grapevine bridge was being repaired. This was not effected till after nightfall. Alexander says that it could have been repaired earlier, that there was a ford close by, and that, even if he could not cross there, he might have followed behind Longstreet and Hill over New bridge. Now, one would like to know, first, whether the ford was practicable for artillery; second, whether the bridge really could have been repaired earlier; third, how much delay would have been entailed by adopting the third course, which incidentally was contrary to orders, and would appear to mean not only several miles' extra marching, but a great blocking of the roads.

All these points want clearing up before we can give a final verdict. It will be noted that in the article in question, in speaking of Jackson's action on this day, Sunday is written in brackets. This is no doubt intended to amplify a remark made in the same author's book, that Jackson's attitude during the seven days was either "that of a rabid Sabbatarian or that for which Achilles was blamed at Troy."

To this it can only be remarked that such a bald statement, shirking as it does all the above-mentioned difficulties and the arguments of a great authority, displaying an even greater prejudice and unfairness than that of even his bitterest critics, who venerated Jackson's memory even though they believed that he had displayed too bigoted a regard for the Sabbath, and a disproportionate care for his men—such a statement can only be described as verging on the impertinent.

If adequate explanations of statements are too much to expect from a magazine article, we might at any rate hope to see common fairness displayed. But in speaking of events on the 26th, there is a good deal of subtle misrepresentation. "What was Jackson doing on that day?" is the question asked and obviously intended to convey the impression that nothing but incompetence or disloyalty to his brother officers stood in the way of his supporting Hill. Are want of maps, the fatigue of troops, the necessity of constructing bridges, and incessant skirmishing

with the enemy no reasons for delay? The statement that "Stuart had bridged the Totopotomoy" requires proof. The evidence seems to be conflicting. Jackson says Whiting repaired the bridge, and Henderson asserts that the operation delayed him for a full hour.

In a review of "The War of Secession," in the April number of this magazine, the author of that work is commended for having opened a field of inquiry into the "origins of legends." Legends are sometimes rather hard things to kill; indeed, they can only be killed by closely reasoned arguments and careful sifting of the evidence, not by dogmatic utterances. If the picture of Stonewall Jackson given to us by Colonel Henderson is really a legend, if the interests of historical truth require that it should be dissipated, let us by all means see the reverse side of the picture in all its details, supported by good evidence. It is probable that such an effort would meet with much the same fate as that of a certain Colonel Mitchell who published a work on Napoleon, in which he proved, at any rate to his own satisfaction, that that individual was an incompetent general, a gigantic impostor, and an unutterable blackguard; but it would at least be an honest method of dealing with history.

this campaign, it was one of those temporary lapses which are common to all who hold high responsibility. Conceive such a method of criticism as that employed by the article in question applied to the greatest commander of any age! It is only the literal truth that Napoleon completely lost his head at Castiglione in 1796, that his tactics at Marengo were foolhardy and faulty to a degree, that he suffered from a serious "collapse of energy" and irresolution at Borodino in 1812, again during a critical period of three days at Düben in 1813, and after the battle of Ligny; but would the statement that he was rash, idle and irresolute be giving a true picture of his military career?

And yet this is an exact parallel to the method employed.

What impression that is not totally misleading can be gathered from the whole tone of the article, and from expressions such as "Lee being set the task of redeeming an unfavorable strategical situation with an army deficient in *morale* or maneuvering power, and only half loyal to its commander," or of

"Lee having pinned his faith to one subordinate who signally failed him"? As they stand, the only opinion one can come to is that Lee was a somewhat reckless commander, who in times of emergency showed a lack of resolution; that an army which lost about 25 per cent. in a week's continuous marching and fighting, which included a division that in two successive days' fighting endured a loss of 33 per cent., which at the end of those seven days poured out their blood like water on the open slopes of an impregnable position—that this army lacked morale and distrusted its commander! That the hero of the Second Manassas and of Chancellorsville was a religious maniac, incompetent and disloyal both to his superior officers and to his colleagues! Is this really a true picture? It seems a poor substitute for Henderson, at any rate.

It is unfortunate that the writing of military history in this country appears to be confined to those who wish to "cram" the details of a campaign into the brains of officers going up for promotion examinations. On the Continent such works are written for an appreciative public, who are judges not only of literary merit, but who, or at any rate a large proportion of whom, have some knowledge of military matters. In this country they are too frequently served up as dry bones for the benefit of bored subalterns. There is nothing more remarkable than the way in which Colonel Henderson's work has been recommended to officers and set over and over again for examinations, until it is to be feared the natural "cussedness" of humanity is inclined to take the form of voting Jackson a prig or a bigot. The only explanation is that that work is almost the only living entity in this "valley of dry bones," the one description of war which gives not only a scientific exposition of the principles of strategy, but a human picture of war as it really is, and the physical and moral conditions which dominate it. Is it not of far more educational value to read in Colonel Henderson of the difficulties experienced by the Confederate columns, vainly trying to cooperate in thick bush, vainly trying to form a junction of converging columns on the battlefield, an operation which has rarely succeeded, and then only when guided by a staff trained to the highest pitch, than it is to follow these off-hand criticisms and arbitrary methods of dealing with strategical and tactical situations without a single mention of the nature of the country or of the extreme difficulty of combined movement in swamps and thickets?

For examination purposes and in order to impress an examiner, it is no doubt well not to be too elaborate, and to be able to vaguely compare the situation during the seven days to Vittoria, Nivelle or Austerlitz, all of which are brought in, in different places, either in the book or article, is no doubt an asset; but the value to a serious student of war is doubtful. He knows that there is about as much similarity to the tactical situation at Austerlitz as there is between the swamps of the Chickahominy and the rolling hills of Moravia.

"In war the moral is to the physical as three to one," and if succinct accounts of great campaigns are to be written for the education of officers, the task should be approached in the spirit of Colonel Maude's 'Campaign of Leipzig,' a work the scope of which is necessarily limited, but where useless details are avoided, and which is an exceedingly clear, thoughtful and carefully reasoned account of a national struggle dealing with all the problems, both physical and moral, involved.

Of late years some of the finest pictures of war have been given us by a civilian writer, Trevelvan, in his works on Garibaldi. It is from such works and from military memoirs that we learn the most. It is possible that authors, led away by enthusiasm, exaggerate the merits of their heroes; it is possible that this author exaggerates the qualities of Garibaldi as a leader of men; it is possible that Colonel Henderson has placed Jackson on too high a pinnacle of glory; it is possible that Plutarch's heroes were not heroes at all; but if we are to follow Napoleon's advice "to read and reread the campaigns of the great masters of war," it is to such works we shall turn for inspiration, and for a true picture of war and the human equation which is its most important element. We shall leave others to serve up their somewhat tasteless hash of dry bones, carefully boiled down, with all the marrow extracted from them, and treated with their own special sauce, for the benefit of those who shall thus be fortified to impress the examiner with their extensive knowledge of war as it never really was, nor ever will be.

A NEW AUTOMATIC MILITARY RIFLE.*

A FTER several years of discussion and testing, by nearly all the leading powers of the world, reports say that Mexico is about to give a practical demonstration of an automatic rifle in the hands of the regular troops of that country. Mexico is not one of the greatest powers, nor are Mexican troops considered to be as well trained in modern military tactics nor as well educated as those of some other countries. Nevertheless, the Mexican military authorities evidently believe that the men are wise enough to learn how to handle an automatic gun.

The "automatic" or "self-loading" rifle is in its early stages of perfection and the Mexican rifle will be subject to constant criticism, and improvements will be made as years go on and more countries follow Mexico's lead. The same was true of the bolt action military guns in use by the various armies of the world today. They are all essentially the same, but the new Springfield is the latest and considered the best.

The same evolution will take place in the automatic rifle. Already the process of elimination and simplification has begun. The various methods of obtaining a self-loading action have been thoroughly tested out.

The "blow-back" and "recoiling barrel" actions have been discarded and the "gas-borrowing" principle pronounced the best. It only remains now to prove that it is possible to make a military automatic rifle simple enough for the average soldier, who is lacking in knowledge of machinery and mechanical principles, to handle safely, easily and economically, and at the same time to make a rifle as light in weight as possible without sacrificing strength, durability and accuracy.

Improvements in all classes of machines are accomplished with the same end in view, namely, to produce a given result with fewer movements and in less time without decreasing the efficiency of the result. A practical demonstration of the auto-

^{*} From Arms and The Man of May 12, 1910.

matic rifle will show to a large number of waiting mechanics and inventors just where the weaknesses lie and where the greatest

improvements can be made.

Maxim, Colt and Benét-Mercié all hold patents on automatic machine guns of the gas-operated type, and McClean, M. F. Smith and General Mondragon, the inventor of the Mexican rifle, hold patents on shoulder arms using the same principle of automatic action. Besides the above, there are many others in this country and in Europe who have used this principle in the design of automatic arms, as it is by no means new. The method of applying the principle and improvements in its use are all that can be patented.

If, then, no radical departure from the "gas-borrowing" principle is made, it is safe to say that the automatic military rifles of the future will simply be improvements on the proposed Mexican arm. This rifle is said to function perfectly and weighs nine pounds four ounces, but photographs show it to be rather

awkward in appearance and complicated in action.

The writer, during a recent visit to the Standard Arms Company of Wilmington, Delaware, had the pleasure of seeing a new automatic rifle designed by Mr. M. F. Smith and built by that company.

At first glance it would not be noticed that this rifle was an automatic, so nearly does it resemble the bolt action rifle in use today in the various armies. The lines of the arm are graceful and easy, the mechanism is simple, compactly arranged and incased so that there are no projecting parts or sharp corners to mar the appearance, which is not unlike the new Springfield, having the same accessories, bayonet mount, swivels, steel butt plate and wood casing along the barrel.

The automatic, however, has a solid breech and the bolt does not come out and overhang when in the rear position as is the case with the Springfield. This, of course, would be a very bad feature in an automatic arm, as the bolt would come back in the shooter's face after each shot. The rear sight on the automatic has been brought back as far as possible, and is mounted on the rear end of the receiver, thus giving a maximum distance between the sights. The sight used is the same as that mounted on the Springfield.

Readers who have seen the Standard automatic sporting rifles are familiar with the principle of gas operation. For the benefit of those who do not understand this principle, a simple explanation of the mechanism may serve to make clear the following description of the new Standard military rifle:

The power to automatically eject the empty shell after firing the rifle is taken from behind the bullet just before it issues from the muzzle of the barrel. There is no loss of power or penetration of the bullet as it has attained its maximum velocity before the automatic action begins.

At a point 3½ inches inside the muzzle of the barrel the bullet passes over a small hole. The pressure from behind the bullet is flashed through this hole into the cylinder under the barrel. The piston in the cylinder is driven back, compressing the action spring which is coiled around the piston rod. By means of the piston rod, cross head and two connecting rods, the rearward motion of the piston is transmitted to the breech bolt and this bolt is unlocked and driven backward, extracting the empty shell from the chamber of the barrel.

At the end of this backward stroke the bolt enters a recess which serves as an air cushion or dash pot to ease the shock of the backward thrust. The empty shell is ejected and the bolt starts on its forward stroke propelled, by the power of the compressed action spring.

The firing pin is cocked by the backward stroke and held in this position on the forward stroke until it engages the sear and the bolt lugs enter the locking grooves. During the forward stroke the front end of the bolt engages the top cartridge in the magazine and pushes it forward into the barrel chamber. In this way the rifle is automatically operated, and the shooter merely maintains his aim and pulls the trigger for each shot until the magazine is empty.

In general, the above description will apply to any gas-operated automatic rifle. The distinguishing features of the New Standard military are the simple and complete ways in which the requirements for an automatic military have been met. The requirements of the British and the United States War Boards demand that the military automatic must be capable of variations in the method of use.

It must load with a clip, must be a single loader holding the magazine full and in reserve, or shoot automatically, using cart-

ridges from the magazine.

The New Standard is designed to fulfill these requirements without complicating the necessary mechanism of the automatic action. The various methods of loading and operating are controlled from the magazine. On the side of the rifle just back of the magazine is a button, which by turning a quarter turn converts the rifle from a "single fire" to "magazine fire," or vice versa, at any time with any number of shells from one to five in the magazine.

The operation of the rifle as a single loader is accomplished

in the following way:

As the bolt reaches the back end of its stroke, a stop plug springs up in front of it and holds it in the rear position. The operator may now push a single shell into the top of the magazine and as he raises the rifle to his shoulder he presses up the bolt-releasing lever which is situated inside the guard and in front of the trigger.

The bolt will spring forward, pushing the cartridge into the chamber and locking and cocking the rifle. When the rifle is fired the bolt automatically unlocks, withdraws and ejects the empty shell and is held open by the stop plug before mentioned. The soldier, on lowering the rifle from his shoulder, finds it open to receive the next shell, thus eliminating a hand movement of the bolt necessary to eject the empty shell, as with the present service rifle. This single-loading operation can be performed rapidly, at the same time keeping the magazine full and in reserve.

By turning the button on the side of the rifle from "single loading" to "magazine fire," the plug which holds back the bolt after each shot is withdrawn and the rifle may be operated and six shots fired automatically as fast as the trigger is pulled. When the magazine is empty the plug again engages the bolt and the rifle remains open after the last shot, permitting the quick recharging of the magazine from a clip of five cartridges. Thus it is possible for a soldier to operate the rifle either as a single loader or from the magazine without losing time and with the least possible number of hand movements.

The action of the rifle is readily mastered, the converting button has index marks showing the positions for "single fire" and "magazine fire," and a magazine hinge has an indicator to show the number of cartridges in the magazine at any time. The bolt operating lever is locked forward and turned down out of the way when not in use. It does not project from the rifle and does not move backward and forward with the bolt when the rifle is functioned automatically. To use this handle to operate the bolt by hand, it is necessary to turn up the handle, press it in to engage the connection rods and pull back the action.

The handle releases itself when the action is at the forward end of its stroke. At the forward end of the barrel is the attachment and valve through which the gas passes from the barrel to the piston to operate the automatic mechanism. The valve may be turned one-half turn, cutting off the gas and making the rifle entirely hand-operated in action. The magazine is of the open box type and holds six cartridges. It can be loaded quickly with the clip from the top or by turning the rifle over, opening the cover on the bottom and dropping the cartridges in. This same cover permits of unloading the magazine from the bottom instantly at any time without pumping the cartridges through the rifle.

The automatic rifle has been fitted with several barrels chambered and bored for the different calibers of military ammunition. Experiments have been made to test velocities, pressures, etc. With the 7 mm. or .276 caliber cartridge having 139 grain bullet a velocity of 2,700 feet per second was obtained, with a chamber pressure of 44,000 pounds per square inch.

The rifle, like all military rifles, is not intended to take down, but this can be done by removing a single screw in the bottom just back of the guard. The rifle can be entirely dismounted in a very few minutes with few tools. The small number of parts contained in the mechanism is astonishing. The rifle shoots accurately, handles perfectly, and the weight is about nine pounds, unloaded.

In conclusion the writer would say that the New Standard comes nearer to fulfilling in a satisfactory manner the requirements for an automatic military rifle than any other that has appeared up to this time.

CONCERNING THE PURSUIT.*

A RTICLES on the cavalry fire-fight and the pursuit can nowadays be found in every issue of most military publications. These theoretical pursuits will undoubtedly cause great disappointments in actual war. If, in war, we have once been disappointed in our expectations and hopes, it will be difficult to pick up courage to entertain renewed hopes, even should circumstances be favorable and promise fulfillment of those hopes. If we do not completely and entirely understand the matter of pursuit, the probability will be that we will take it up when there is no hope of success, or that we neglect to do so when everything is in its favor. I hold that the how and when of the pursuit is of less importance than is the manner in which the victory was gained; I also hold that the national character of the pursued is a great factor in the pursuit.

"According to theory, the pursuit should immediately follow the victory—a requirement which no one will gainsay, net even laymen; but this requirement is but seldom carried out in practice. Military history cites but very few such glorious examples as that of Belle-Alliance. It takes a very strong and compassionless will to require troops, which have marched, fought and hungered for more than 12 hours, to undergo new hardships and dangers instead of receiving rest and food. Now, assuming this will is present, the pursuit will still depend on the manner in which victory has been gained. Pursuit will be difficult to inaugurate if all bodies have become mixed on the battlefield, as was the case at Königgrätz, to such an extent that hours are required to reform tactical units; or when, as was the case at St. Quentin, all troops, even the very last reserves, were engaged, so that no intact, closed body of infantry is available to take up the pursuit. Without such infantry support, cavalry can but very seldom execute that task alone, especially at night, when it can be delayed by many features of the terrain and by insignificant hos-

^{*}Translated from Kavalleristische Monatshefte by Harry Bell, M. S. E., Army Service Schools Detachment.

tile detachments. General v. Goeben started his pursuit of the vanquished enemy only on the succeeding day" (v. Moltke). General v. Goeben ordered the relentless pursuit of the enemy at 12 midnight to take the direction of Cambrai, Caudry, Bohain and Le Chateau Cambresis. In his orders we find: "The question now is to gather the fruits of the victory; today we have fought, tomorrow we must march to complete the destruction of the enemy. To this end I direct: All troops march 20 miles tomorrow, the infantry, wherever practicable, carrying knapsacks on wagons." In the meantime the French had covered 20 miles during the night, and that in complete rout; they were not overtaken by the Germans. With different opponents the case possibly would have been different. That is the reason I stated above that the national character of the vanquished is a material factor in the pursuit.

At that time the General had his doubts as to whether or not the cavalry, without proper support of intact infantry, could successfully perform the task at night; today those doubts would be less, considering the present day armament and training of our cavalry reinforced by machine guns; still the solution of the task remains very difficult.

A pursuit which does not promise an *early* panic in the ranks of the pursued had better be left alone; at the best it will lead only to a series of rear guard fights which, as is shown by military history, frequently are as costly to the pursuer as to the pursued. Reverses may create conditions which may make it exceedingly desirable to have still intact cavalry at our disposal.

The question arises. Who can state with any degree of certainty that the vanquished is so demoralized that a very short pursuit will suffice to change his retreat into panic and rout? Only a very competent and experienced general may be able to answer this question, considering all circumstances; that it can be answered with a certain degree of certainty is not at all impossible. Of main importance in arriving at the answer is the degree of vehemence and the duration of the preceding battle; whether it is the enemy's first defeat, or whether it has been pre-

ceded by a series of defeats; climatic influences also, the time of day, and last, but not least, the nature of the terrain, play an important role in arriving at that conclusion.

Cavalry is the trump card in the hand the supreme commander holds; to play it at the correct time is an art. War is a game, and consequently subjected to changes of fortune; and unless fortune smiles, there is no art which can overcome fate.

v. T.

"STONEWALL" JACKSON: SOME CURRENT CRITICISMS.*

THERE is a tendency amongst British historical writers, and especially amongst those who cater for the military clientèle, to attach undue importance to "facts." afraid that our cramming system is responsible for this. It is easier to forcibly feed a mind with facts than to train that same mind to form opinions and judgments. Hence our martial Gradgrinds and Dry-as-dusts. Long catalogues of marches, times, distances and orders of battle; schedules of brigades and divisions, each docketed with their strength and subordinate leaders (in brackets) and their distinguishing numerals (in Roman figures)—these may impress the groundlings with the writer's wisdom and eye for detail; but they do not constitute Military History. I have never forgiven the pedagogue who impressed for all time upon my infant mind that something befell a gentleman called Marcellus so long ago as 222 B. C., or that William Rufus was shot through the eye by an archer in the New Forest in the year 1100.

The only occasion where minute detail is justified is in tactical exercises or war-games, where we wish to elucidate certain specific problems or to reconstitute circumstances—and in these cases it is important that *every* detail that can possibly have had any bearing on the situation is taken into account.

^{*} From The United Service Magazine for April, 1910.

The article on the Shenandoah Valley campaign in the February number of this magazine seemed to me a pernicious article for three principal and distinct reasons:

- 1. It was bald and dull;
- 2. It was paradoxical and misleading;
- It was subversive to one of the tenets of our military faith.

Taking these in order: on its baldness and dullness it is unnecessary to enlarge. To compress half a thousand pages of closely printed Henderson into nine pages of a magazine article is "Potted Brains" with a vengeance; either it is intended to facilitate the sluggard and ne'er-do-well in short-circuiting a most advantageous part of his military education, or it argues a most presumptuous vanity on the part of the writer.

It is a favorite device with Mr. Chesterton, Mr. Shaw and other of our modern "brilliants" to enhance a reputation for perspicacity by pretending to hold a view diametrically opposed both to their own knowledge and the accepted popular opinion. Victrix causa diis placuit, sed victa Catoni. This effect is easily obtained by a judicious suppression of that which is true and insinuation of that which is false. Only a very gifted or a very conceited advocate, however, could hope to subvert in one brief essay Colonel Henderson's laborious* estimate of Jackson.

Let us glance curiously over the first two pages of the article in question. The opening sentence cheaply tries to throw odium over Jackson's abilities as a soldier by describing him as "an ex-professor of Philosophy"—not a word about artillery or tactics, which undoubtedly must have been his favorite subjects of instruction. A few lines further down we find Jackson described as "churlish" for not having been able to get on with Longstreet; yet who can doubt, considering the latter's pig-headed conduct in refusing to attack at the Second Manassas and at Gettysburg, that the "churlishness"—if such a harsh word can legitimately be used to indicate a cautious obstinacy of character—was mostly on the other side? This pettiness is the keynote of the article. On the second page we find the following: "Evidently the Richmond people feared mischief, for they not only

^{*} Colonel Henderson spent fifteen years in collecting material and writing his magnum opus.

vetoed Jackson's plans, but bid him evacuate Romney." Colonel Henderson has clearly shown* that this was due solely to the extraordinary lack of discipline on the part of Loring and his civilian officers, who used their influence at the Capital in a most underhand manner. When the true facts were known at Richmond Jackson's view prevailed, and Loring was removed with part of his troops.† That the modest Jackson had the bad taste to apply to be appointed *commandant* of the Virginia Institute is so unlikely that chapter and verse should certainly be given for such a statement.

Von Moltke is said to have expressed the opinion that the American troops in the Secession War were an "armed mob" and that no lessons can be learned from their operations. However true this may be for Germany, so far as we are concerned it is palpable nonsense. In the same way it is easy to sneer at the Shenandoah Valley campaign as "an affair of outposts." The phrase might be becoming to the hero of Wagram and Austerlitz: but on English lips it savors of precocity. The "Life of Stonewall Jackson" is a priceless legacy bequeathed to the British Army by a splendid soldier whose career was unstintingly dedicated to the public service. The labor of a lifetime, the weighty teaching of an able and highly trained mind, we should be ungrateful indeed were we to allow his judgments to be lightly set aside in the short space of a magazine article. Colonel Henderson has proved beyond cavil that the Valley Campaign was a masterpiece of political strategy, and has also shown that its half dozen battles serve to demonstrate, in miniature, the whole range of military strategy.

It has been wisely said that "the fictions of history are largely responsible for its facts." It is for this reason that the hero of a biography, like a wife or a commanding officer, should be placed upon a pedestal. Whilst admitting the accuracy of Professor Rose, we turn with zest to de Bourienne; from Johnson's "Lives of the Poets" to Boswell's "Life of the Doctor." There may be another, and perhaps seamier, side to Jackson's career, but Colonel Henderson has done well to keep it from our sight. We want no blemishes or infirmities reproduced upon the

^{*&}quot;Stonewall Jackson," chap. vii.

[†] Not all his troops, as Major Redway suggests.

statue as it is reared for our delight, nor should we tolerate dirt to be flung at it in its glorious completeness.

It is said sometimes, "I simply can't read 'Stonewall Jackson,' the fellow seems such a prig." To those who admire the character of the late Colonel Henderson this view seems almost incomprehensible, and certainly Jackson cannot have been considered a prig by the thousands of Anglo-Saxon soldiers whose devotion he gained. He was not one of those afflicted with the military disease of active participation in prayer meetings and gospel readings; he merely gave every facility to his chaplains for carrying out their business in so far as it did not interfere with vital military processes. Like many another of the world's captains, his piety and conviction gave a sincerity to his character which compelled respect. This function of command is so important that, if it does not exist, it sometimes has to be simulated. Thus Napoleon: "My extreme youth, when I took command of the army in Italy, rendered it necessary that I should evince great reserve of manners and the utmost severity of morals. This was indispensable to enable me to sustain authority over men so greatly my superiors in age and experience. I pursued a line of conduct in the highest degree irreproachable and exemplary. In spotless morality I was a Cato, and must have appeared such to all. I was a philosopher and a sage. My supremacy could be retained only by proving myself a better man than any other man in the army. Had I yielded to human weaknesses, I should have lost my power." In this world so full of doubts and fears, humanity clings to any man whose rule of conduct appears fixed and to be relied upon, and most great leaders have realized how great a part steadfast religious belief plays in forming such a character. Even the dashing Michel Ney, on the eve of his execution, confessed that "never had he gone so boldly under fire as when he had first recommended his soul to God." Some inkling of the magic of Jackson's power in this respect is brought home to us by those moving words used by one of the chaplains of the Valley Army on the occasion of the unveiling of the Jackson monument at New Orleans: "When in Thine inscrutable decree it was ordained that the Confederacy should fail, it became necessary for Thee to remove Thy servant, Stonewall Jackson." How keen and earnest he must have

been, that even Heaven was deemed reluctant to disappoint him! Those who consider Jackson a prig probably have not realized the power of unostentatious religious sincerity on Anglo-Saxon masses. Even blasphemers appreciate a mind free from pettiness or meanness—and such is essential nowadays, and in this country more than ever, for a leader of men.

Attention has been drawn to the similarity between the American armies in the war of 1862 and our own Territorial Army,* and it is suggested that the conditions are so analogous that they are worthy of close study by our Territorial officers. This is true in a sense; but is not unfraught with danger.

In a war between two Powers a great deal depends, not only on the thoroughness of peace organization, but also on the "military atmosphere" created by peace training. A nation has its own ideas in these matters, and it is disconcerting to find that a possible rival, with just as much brain-power and hard work devoted to solving identical problems, arrives in many instances at precisely opposite conclusions. The solution is vital; one must be approximately correct, the other grievously wrong; but who can dare to prophesy? How well this is put by General Langlois: "We ought to realize that soldiers who are called upon to command, arrive upon the field of action with a military education which has been created and fostered in surroundings which are permeated by ideas, many of which are often erroneous.. It is unjust to hold the chiefs of an army responsible for the mediocre results of an imperfect military education. The responsibility rests with those in higher authority, or rather it should be divided among all who form, as it were, the military atmosphere of their generation."

Now, in a civil war—"the heat of a fever"—both sides have the same military atmosphere. The conditions in this respect are scrupulously fair, and the maneuvers on each side may be expected to conform to the "field-day" of peace time. The opposing commanders know each other's mode of thought, the quality of their troops, and even the extent of their resources. This is the reason why the War of Secession, although the combatants were in most ways unequally matched, dragged on so much longer than the other wars of the last half century.

^{*} See an article by R. H. Beadon in National Defense, December, 1909.

It is safe to say that our Territorial Army will never be involved in a civil war. Its position is peculiar. Whilst our best regular troops are liable to be called away to engage a barbaric foe armed with jezails or assegais, our second line army may have to content itself with facing some Continental Corps which is at full strength without its reservists (i. e., at the acme of training). Reading of the appalling ignorance of military usages displayed by some of the Volunteer officers in the American Civil War, one cannot but hope that, thanks to the generously self-imposed training of our Volunteers and Territorials, we should, in the same conditions, be able to produce superior armies. Unfortunately our conditions are by no means likely to be the same.

But I will not "adorn the tale." Colonel Henderson has provided his own antidote to any delusions which may exist on this subject in his essay on "Battles and Leaders of the Civil War," where he indorses Lord Wolseley's opinion that a single Army Corps of Regulars would have turned the scale in favor of either side.

Science has made long strides since 1865. Artillery and musketry are much more complicated and the world's standard of efficiency in these two crucial branches of the art military has greatly advanced, and calls for much keener specialization. Sea-power, also, has been revolutionized since the days of the Merrimac and Monitor. The armament which bottled up Port Arthur might have altered the whole course of the war, could some wizard's wand have called it into being at the mouth of the James or the Potomac. On the other hand, no river craft nowadays could hope to deal with decently armed forts along the Mississippi. Balloons were used at Fredericksburg, and several times afterwards, with indifferent success: but had the Wright brothers been on the Federal side, we may imagine that a flight from Winchester over the Luray Valley would have played the devil with the strategy of Front Royal or of Port Republic.* and that a single Parsefal would have made private

^{*} Jackson might possibly have made his troops march and bivouac in forests, which will probably become much more important in these days of aerial scouting. Also tents will have to be khaki-colored or dyed in spots with primary colors.

detectives a back number with McClellan and even have stultified the enterprise of Ashby and Stuart.

With so many changes, it would seem, at first sight, that few reliable lessons could be gleaned from the study of such vieux jeux. Needless to say, this is not a fact. Notably because the methods of strategy and the laws of human nature are constant throughout the ages, but also because such a war teaches us that disappointments and surprises are sure to come and gives us an insight into their nature, and the determination; and adaptability necessary to overcome them. Colonel Henderson's history most markedly demonstrates the importance he attached to the dictum that the moral is to the physical as three to one: for the pages in which he discusses psychology, discipline, etc., bear very nearly that proportion to those devoted to armies, marches and material. And to subordinate officers the former are the really important pages. That the strategy is invaluable to those who need it is handsomely testified by Lord Roberts: "Whilst still thinking over this problem (what measures to adopt on outbreak of war) I read 'Stonewall Jackson,' and was much struck with the extraordinary effect which strategy-whether Lee's or Jackson's—had upon the campaign in Virginia, and also with the result of Jackson's swift and unexpected movements, as described by Henderson. Bearing all this in mind, when appointed to the chief command of the army in South Africa, I determined that the wisest thing to do, both from a military and political point of view, was to march on the capitals of the Orange Free State and the Transvaal, and so to break up their combination. It will be seen from this what a high opinion I had formed of Henderson's abilities."

Most of us, however, will never be called upon to lead great armies, and for us the lessons of the American Civil War are the lessons of everyday dealings with the men in camp, on the march, and on the battlefield. The mind well stored with precedent has confidence in its judgments when tried even in the most distracting and unexpected circumstances. It is not necessary

[†] What a bitter discouragement to a keen general the straggling and desertion must have been. Fancy, on the morning of an important battle, what opinion one would form of the patriotism of one's countrymen on finding that half the strength of the army had sloped off to spend the harvest-time in their homes. Is it right to hope such conduct would be impossible in England?

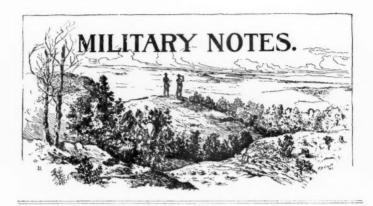
to remember actual details—the example once learnt is apparently forgotten; but when occasion arises some tiny storehouse of the brain delivers up its treasure as though it had been waiting through the ages for that fateful moment. And what a mass of precedent is to be found in the many records of the American Civil War, all so readily accessible in our mother tongue. Colonel Henderson's "Stonewall Jackson" is as easy and pleasant reading as any novel, and yet probably no book on the war is more instructive to British readers. Those who have no taste for military history do wrong to imagine that they derive any professional benefit from the "cram" books of dates, figures and "facts," although at first sight these latter may appear to contain the very cream and essence of the subject. If military histories are too heavy reading for them, let them try and develop the taste (I believe it can be acquired) by reading some lighter books, such as H. M. Stanley's recently published Autobiography (who had the doubtful, but in his case perhaps excusable, distinction of wearing both the Confederate and Federal uniform during the war) or that capital psychological novel of Stephen Crane's. "The Red Badge of Courage." From such military history we learn much to help us in our rules of conduct; our methods of dealing with and training men in peace-time, preserving discipline, and such-like common but important matters.

Military history should be the parade-ground of the intellect. As the soldier drills and drills until the movements started by a certain word of command become his second nature, so should the officer think and think. "To be able to think with vigor, with clearness, and with depth, in the recess of the cabinet, is a fine intellectual demonstration," says Disraeli, "but to think with equal vigor, clearness, and depth amidst bullets appears the loftiest exercise and the most complete triumph of the human faculties."

Military history also teaches us that "whatever men have done, men may." "The heroic example of other days is in great part the source of courage in each generation, and men walk up composedly to the most perilous enterprises, beckoned onwards by the shadow of the braves that were."

And military history is found in biographies, memoirs, diaries and dispatches—in the human documents of the forced march and the battlefield. Not in the chronological compilations of the pedagogues—drear skeletons in alluring (and usually costly) sarcophagi.





CLASSIFICATION OF SADDLE HORSES ACCORDING TO THEIR WEIGHT AND GIRTH.

A^N expert jury of well known judges of horse flesh in France, has just rendered a decision of considerable interest to buyers of horses intended for the cavalry.

Leaving aside the questions of necessary conformation and action, saddle horses have heretofore been required to possess a certain more or less well defined relation between height and weight, according to the pounds they may be expected to carry: The jury of the Paris horse show this year has discussed this question in all its aspects.

They asked themselves if some fairly definite rule of guidance could not be found to help it in its classifications and decisions. The answer is the following, in which for the first time, as far as we know the relation existing between weight of horse, girth and weight to be carried are definitely specified.

Conformation of back and size of cannon bone being satisfactory, the following rule is considered based upon experience:

A horse weighing at least 1,045 pounds, with a girth of at least 71 inches, should readily carry a minimum of 209 pounds on his back.

A horse weighing at least 935 pounds with girth of 69 inches, should carry from 187 to 200 pounds.

Such horses are divided into two classes, according to height: First, those standing 15 hands 2½ inches or over; Second, those under this.

A horse weighing not over 825 pounds, with girth 67 inches, should not carry more than 187 pounds.

It is to be remarked in this connection that French Cuirassier horses have to carry about 280 pounds, dragoon horses (corresponding about to our cavalry mount) 250 pounds, and light cavalry 235 pounds.

The above classification, therefore, is not carried far enough to apply to these categories as such, but stop at weights usual in horses ridden for sport and pleasure.

Т. В. М.

REMOUNTS IN THE GERMAN ARMY.

THE details respecting the remounts for 1909 are as follows:

a. In Prussia.

			1	, ,	
Province or Country.	Number of Markets Maint- ained.	Offered for Sale	Number Selected.	Number Bought.	Per Cent.
East Prussia	257	12,666	7,433	6,561	52
West Prussia	33	1,400	676	489	35
Posen	53	1,953	963	728	37
Schlessia	6	325	85	65	27
Brandenberg	16	418	190	165	40
Pommern	18	479	244	225	47
Hannover	53	2,712	1,276	1,250	46
Schleswig-Holstein	33	1,408	433	425*	30
Rheinland	3	336	54	32**	10
Mecklenburg	52	2,079	1,061	924	45
Oldenburg	10	268	65	6I	23
Berlin		ī	T	I	100
Total	554	23,964	12,481	10,926	46
Total 1908	520	23,820	12,520	10,949	46
Fotal 1907		23,376		10,817	46
Total 1906		22,954		10,704	47

^{*}Including about 65 cold-blooded for heavy field artillery,

^{**} Only cold-blooded.

AVERAGE PRICE:

1909	.M. 1065=\$253
1908	M. 1045=\$249
1907	. M. 1025= \$244
1006	M. 1000=\$238

b. In Bavaria.

Of the 612 remounts collected within her own borders, Bavaria bought 350=57%; in East Prussia, 791 out of 939, 84%; in Holstein, 284 out of 291, 86%; the average age of these remounts being 3 to 3½ years. In addition to the above, 120 matured artillery remounts were purchased in Hamburg, and for the machine gun companies 28 from Bavaria and 52 from Holstein. For young remounts 1000 Marks (\$238.) were paid; for matured remounts 1300 Marks (\$310.); and for machine-gun remounts, 1430 Marks (\$340.) Matured remounts only are bought from the dealers.

c. In Saxony.

The Saxon Remount Commission purchased 970 of the 1423 remounts offered for sale=68%. Of this number, 236 remounts were secured within the limits of Saxony, and from which 96 were taken. In East Prussia 763 were bought out of 1020; in West Prussia 13 out of 15; in Hanover, 18 out of 32; and in Holstein, 80 out of 120. Of the total number of remounts purchased, 235 were bought from dealers and 735 from breeders.

The total number of matured remounts purchased by the commission was 510 (= 80%) out of 636 which were offered for sale. Four (4) of this number were bought in Saxony; 322 (out of 400 offered) in East Prussia; 94 (out of 130 offered) in Posen; and 90 (out of 100 offered) in Holstein. Of the total number of remounts purchased 428 were bought from dealers and 82 from breeders. The average price for young remounts was Marks 1037 (\$245) and for matured remounts (cold-blooded) 1350 Marks, (\$321); for warm-blooded 1135 Marks, (\$270).

d. In Wuerttemberg.

Wuerttemberg secures her 4 and $4\frac{1}{2}$ year remounts from Prussian Remount Depots—an average of 255 each year which are immediately assigned to the different regiments. The artillery remounts are secured, partly within her own borders and partly from North Germany. The total number of remounts purchased by the Remount Commission was 252 (=61%), out of 413 offered for sale. Of this number 73 were from Wuerttemberg, 54 from Holstein, 42 from West Prussia, and 83 from East Prussia. Average price: Marks 1069, (\$254).

The total number of remounts offered for sale in the German Empire was 28,478 of which 14,247 (=50 %) were bought.

The following shows the number received from the principal breeding districts:

Province.	Number Offered For Sale.	Number Bought.	Per Cent.
East Prussia	15,108	8,520	57
West Prussia	1,466	544	38
Posen	2,085	822	40
Holstein	2,145	1,069	50
Hannover	2,744	1,268	46

S. C. S.

UNITED STATES FIELD ARTILLERY ASSOCIATION.

THE United States Field Artillery Association was organized at Fort Riley, Kansas, June 7th, in an enthusiastic meeting which was presided over by Lieutenant Colonel Eli D. Hoyle, 6th Field Artillery, and attended by thirty-three regular and forty-eight National Guard field artillery officers. Every regiment of field artillery, except the Second, was represented; and eighteen states were represented by officers of the National Guard.

The objects of the Association, as stated in its constitution, are to promote the efficiency of the field artillery by maintaining its best traditions; to publish a journal for disseminating professional knowledge and furnishing information as to the field artillery's progress, development and best use in campaign: to cultivate with the other arms, a common understanding of the powers and limitations of each; to foster a feeling of interdependence among the different arms and of hearty cooperation by all; and to promote understanding between the regular and militia forces by a closer bond.

Membership in the Association is divided into two classes -active and associate. Commissioned officers on the active lists of the field artillery of the regular army and of the organized militia of the several states are eligible to active membership. The following are eligible to associate membership: Commissioned officers on the retired lists of the regular army and of the organized militia of the several states; those who, as commissioned officers, either regular, milita or volunteer, have served with batteries or larger units of field artillery in time of war; commissioned officers of the regular army and of the organized militia of the several states not now belonging to the field artillery, who have served at least one year as commissioned officers in field artillery; general officers of the regular army and of the organized militia of the several states; all commissioned officers and former officers of the United States Army, Navy and Marine Corps, and of the organized militia and volunteers in good standing, not included in the classification hereinabove set forth; and those in civil life whose applications are approved by the Executive Council.

The headquarters of the association are to be in Washington. The Executive Council, elected for two years, is composed of: Colonel Montgomery M. Macomb, 6th Field Artillery; Captain Fox Connor, 1st Field Artillery; Captain Oliver L. Spaulding, jr., 5th Field Artillery; Captain John F. O'Ryan, F. A., N. G. of N. Y.; Captain Robert H. Tyn-

dall, F. A., N. G. of Ind.

It is provided in the constitution that three of the members of the Council shall be officers of the regular army and that two shall be officers of the organized militia. The officers of the Association will be appointed by the Council as follows: A president who shall be an officer of the regular army from among the members of the Council; a vice-president to be selected from among the active members of the Association; a secretary-editor who shall be an officer of the regular army; and a treasurer who shall be an officer stationed or residing in Washington D. C.

This is the first time that National Guard officers have been accorded full rights as active members of a service association or have been given representation on the executive council of such an association, and it is believed that the intimacy arising from this close affiliation will hold the interest of the National Guard officers and prove very beneficial to them. All of the officers of the camp of instruction for National Guard field artillery officers now at Fort Riley have enthusiastically enrolled as members of the Association.

The publication of a field artillery journal has been long desired by all the officers of that arm, and at this particular stage in the development of field artillery it is well nigh indispensable. On account of the relatively small number of officers eligible to active membership in the Association, it is essential that every one who is eligible should join the Association without delay. Any person eligible to membership may become a member by making a written application to the secretary and paying the first year's dues. The annual dues of the Association shall be fixed by the Executive Council, but shall not exceed four dollars per year. Active members are entitled to receive all publications issued by the Association, and associate members are entitled to receive the journal without payment other than the annual dues. Temporarily, applications for membership should be addressed to Captain W. J. Snow, Fort Riley, Kansas.

ESTIMATION DISTANCE TABLE.

To the Editor:

Within the last month I have devised, compiled and computed an Estimation Distance Table for use with troops when training men in the preliminary drills and in the record practice in the estimation of distance. I was first induced to work out this table on account of the labor that I saw was involved each day when I endeavored to have the percentages made by my men in the preliminary estimation drills, posted daily for their information, on the bulletin board. The commanding officer and a great many other officers examined it and were of the opinion that it was such an excellent thing that they desired it printed and accordingly it was printed by the Military Record Filing Co., of 83 Merchant Street, Honolulu, H. T. The organizations at this post have all used this table this season in both preliminary and record estimation drills, and all are of the opinion that it is a great labor saving device. It possesses the virtue that it is simple.

I have, therefore, decided to send it to you thinking that possibly you might deem it of sufficient importance and benefit to the service at large to publish it in the JOURNAL.

I would highly esteem any criticism upon it, for my sole object in originating it was to save time and labor, and the use of it for a short time in actual experience will demonstrate that it accomplishes its purpose. If it has any faults, which it may have, although the use of it so far here has not shown them, any criticism or suggestion as to its improvement would be appreciated.

EXPLANATION OF TABLE.

The first line of horizontal figures are the actual ranges from 350 yards to 1200 yards, whereas those in vertical columns under these are the estimates. At the left hand of the sheet is a column of figures from 350 yards to 1200 yards, these figures correspond to the range estimated by any particular man. The use of the table can be best illustrated by a few examples.

ESTIMATION DISTANCE TABLE—COMPUTED TO 50-YARD INTERVALS

Compiled and Computed by HARRY O. WILLIARD, Captain 5th U. S. Cavalry.

ACTUAL RANGE

RANGE	GE YOS.	350	100	450	200	550	009	650	200	750	800	850	900	950	1000	1050	1109	1150	1200
	350	100%	87.50	77.78	70.00	62 64	58 33	53 KG	50.00	46 67	43 75	41.18	38.89	86.84	35 00	33.33	31.83	30 43	29 17
	400	H5.71	100%	2	80 00	72.73	66.67	61.54	57 14	53 33	50 00	47 08	11 11	42 11	40 00	98 10	36.36	34.78	83.33
	150	71.48	87 50	2001	00 06	81.85	75 00	69.23	64 29	00.00	56 25	52 94	90 00	47.87	45.00	42.86	16.01	89.13	87.50
-	9099	57.14	75.00	XX 80	100%	16 06	88 88 88	76.92	71.43	66.67	62.50	58.82	55.56	52 63	20 00	47.02	45.45	43.48	41 67
	550	42,86	62.50	77.78	00'06	100%	91.67	81 62	78 57	73.83	68.75	61.71	61.11	57 89	55,00	52.38	50.00	47.83	45 83
	009	2× 57	00.00	06.67	90.08	16 06	100%	92.31	85 71	80 00	75 00	TO 59	79.00	63,16	00 09	57 14	54.55	52.17	00 00
	650	14.29	37 50	55.56	N 02 8	81 82	91 67	100%	95 86	86.67	81 25	76 47	72 22	68 42	65.00	61.90	59.09	56 52	54.17
	200		25,00	41.41	00 00	12.73	83 33	92 311	25001	98 33	87 50	82 35	77.78	73.68	70.00	79.99	63.04	60 87	58.33
	750		12 50	33 33	3 50 00	63 64	75.00	81.62	98 86	100%	98 75	NR 24	83 53	78 95	75.00	71.43	68.18	65 22	62 50
	800			22.99	2 40 00	54,55	66.67	76.92	11.53	98 33	25001	94 12	88 X8	84 21	80 00	76.19	72.73	69.56	66 67
	850			11 11	30 00	45.45	58.83	69 23	78 57	N6.67	. 98 75	100%	91.44	89 47	85, CO	80.95	77.27	73 91	70.83
	900	-			20 00	36 36	50 00	61.54	71.43	80 00	87.50	94.12	100%	94 74	00 08	85 71	81 85	78 26	75.00
	950		1		10.00	27.27	41 67	53.85	64.29	73 33	8 81 25	88 24	94 44	100%	95.00	90.48	86.36	82.61	79.17
	1000			1		18 18	33 33	46.15.	57 14	79 90	75 00	82 35	88 89	94.74	100%	95 24	16.06	86 98	83.83
	1030		-			60 6	25 00	38.46	50.00	00 09	0 68 75	78.47	83.33	89 47	95 00	%001	95.44	91.80	87 50
	1100		-				16 67	30 77	42. RG	53 33	3 62 50	70.59	77.78	81.21	80 00	95 24	100%	95 65	91.67
	1150			-		:	33	23.08	35.71	46.67	7 58.25	64.71	7.2 2.3	78 95	85.00	90.48	95,46	100%	95.83
	1200	***		*****				15 38	28 57	40 00	0 50.00	SK XS	66 67	73 68	50.00	85.71	16.00	95 65	100%
1		3000	1	1	1	-	-		-		-	-			1				d Trees

Suppose that a soldier makes the following five estimates: 550 yards, 700 yards, 950 yards, 1050 yards, 1200 yards, and also suppose that the actual distances are respectively: 600 yards, 750 yards, 900 yards, 1000 yards, 1100 yards. Taking the table, glancing along the line of actual ranges until column headed "600" is reached, now pass down this vertical column headed "600" until opposite "550" at the left side of the table and note that the percentage is found to be 91.67; that is the percentage made by the soldier in this estimate.

In the second estimate where the actual range was "750" yards and the estimate was "700," take the column under actual range headed "750," and pass down this until opposite "700" and note the percentage which is 93.33; this is the percentage made in second estimate. Pursue the same course with third estimate and you ascertain that the percentage is 94.44; the percentage in the fourth estimate will be found to be 95.00, and in the fifth case the percentage will, in a similar manner, be found to be 90.91. The estimates are then:

rst	-	40	91.67
2d		-	93.33
3d	-		94.44
4th		-	95.00
5th	-	~	10.00
Total	-		465.35
Divided by 5		-	5)465.35
A			

Average - 93.07 Final qualification, Expert Rifleman,

The table can be used similarly in any other case.

Under each vertical column will be found the tabular difference for that column, that is, each set of figures in any particular column will be found to differ by an amount that is equal to the tabular difference from the set of figures either preceding or following them. For example take column headed "400." The first percentage in this column opposite 350 is 87.50, the tabular difference is 12.50, hence adding 12.50 to 87.50 should give the next set of figures below in this same column. Again taking the first set of figures under 950, which is 36.84, the tabular difference in this case is 5.263 and adding these two sets of figures we obtain 42.10. In this case the table shows 42.11, but if the

percentages had been carried out to three places it would have been found that the figures resulting are 36.842 plus 5.263 = 42.105 = 42.11. It may, therefore be stated that this table is correct to 1-100 of 1%, which is sufficiently accurate for all practical purposes.

It may be asked what is the advantage derived from these tabular differences? Simply that it affords the means of ascertaining with little labor what an estimate of any number of yards might be. The tabular difference in each case corresponds to a difference of 50 yards, therefore 1-50 of the tabular difference will in any case correspond to 1 yard.

Suppose the estimate were 560 yards (though according to the manual and to the practice here, estimates are only made of fifty yard intervals), how could the percentage be obtained?

The nearest tabulated percentage is (supposing the range to be 600 yards, and estimate 560 yards) 91.67 (550 yards), the tabular difference is in this case 8.33 corresponding to 50 yards, therefore for ten yards, it would be 1-5 of this tabular difference or 1.66, which added to 91.67 gives 93.33 as the required percentage. In case of estimates differing by 25 yards from the tabular estimate, it is only necessary to take half of the tabular difference and add to or subtract from the nearest tabulated percentage, according to circumstances.

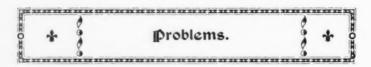
It will be noted that where an estimate is double the actual range that the error committed is equal to the actual range and therefore the percentage made is zero. For example, suppose that the estimate be 800 yards, whereas the range was 400 yards, this is an exaggerated case but it illustrates the principle, the error made is double the actual range and therefore zero.

Again, the firing regulations made no allowance for over estimates as distinguished from under estimates. There is a vast difference, so far as practical results are concerned. In case a soldier makes an over estimate of an actual range of 1000 yards, his estimate being, say 1200 yards, and he sets his sight and shoots consistently according to his estimate, he has little or no chance of hitting his target. On the other hand if he were to under estimate the range by 200

yards and set his sights accordingly there would be the possibility that he might ricochet and hit his target. Of course a man who makes an over estimate commits a far greater error than one who under estimates any given range. According to the manual, however, no cognizance is taken of this and theoretically he commits the same error when he makes an over estimate as he does when he makes the corresponding under estimate. In the computation of this table no allowance has been made for this, as under the regulations none could be made, but the facts stated are none the less true, and this should be corrected when the Firing Regulations are revised.

HARRY O. WILLIARD, Captain Fifth Cavalry.





As will be seen from the report given herewith below, there were fourteen solutions submitted to Non-commissioned Officers' Problem No. 2. This evidence of the interest being taken in these problems by the non-commissioned officers of cavalry is very gratifying, although there was a falling off in the number of solutions submitted by those of the regular service.

Owing to an unfortunate misunderstanding as to the conditions regarding the submission of solutions to these problems, a number of those to Problem No. 1, were received after the time specified for their receipt, that is on or before the tenth of the second month after the publication of the problem. That is, Problem No. 1, having been published in the March number of the JOURNAL, the solutions for the same should have reached the Editor of the JOURNAL not later than the tenth day of May.

This rule was adopted in order that the best solution might be published in the succeeding number of the JOURNAL or before interest in the problem had died out. This, of course, shut out our non-commissioned officers in the Philippines from competing, but the Executive Committee, in drafting this rule, thought it best to have the solutions follow the publication of the problem as soon as practicable in order to avoid the complaint that interest in them was lost when published several months later, as was formerly the case.

EDITOR.

NON-COMMISSIONED OFFICER'S PROBLEM NO. 2.

THE EDITOR:—Fourteen solutions of this problem were received by the committee. Most of the solutions were eminently practical and of a high order of merit.

Satisfactory provisions were generally made for carrying the explosives. If possible each stick of dynamite should be wrapped in a piece of soft cloth (an undershirt, sock or something of the kind) and all the sticks then firmly tied together in a flannel shirt or piece of blanket. The resulting bundle or bundles could be well carried either on the person or strapped on the saddle. If placed in the saddle pockets, the latter should be tied down so as to prevent flapping against the sides of the horse during a trot or gallop.

In most of the solutions the patrol very properly kept to the road and did not attempt to send out flankers. Speed is essential and flankers would delay progress.

In most of the solutions the patrol leader sent a couple of men ahead of him as a point. It is believed that he might better himself be at the extreme front as was done in the prize winning solution. In this position he can observe for himself instead of having to depend upon the observation of someone else and can better command his patrol by signals.

The estimates as to the amount of dynamite required varied greatly, from one or two pounds to twelve pounds or more. Three or four pounds if well placed should be ample, but six or eight pounds might well be taken so as to have extra sticks in case the first charges failed to destroy the bridge.

In most of the solutions a message was sent back to Fort Leavenworth as soon as the hostile patrol was met. It is believed, however, that in view of the small size of your patrol, the importance of the mission assigned to it, and the possibility of its having to fight in order to accomplish its mission, it is inadvisable to detach any men at present. It would be an entirely different matter if the hostile force met were a considerable body of troops or if, from the situation, it was

not to be expected that small hostile patrols would be seen.

The solutions signed "Pendleton," "Raffles," "Smith," "Komatser," and "English," were considered the best of those submitted. The first named, signed "Pendleton," has been selected as the prize winner and is published herewith. With reference to this solution it is believed that in view of the close country passed through the rearmost members of the patrol should be kept more "closed up." The movement across the country from Currans would on the ground cause the loss of much valuable time, but this is not evident from the map alone, and hence is not considered incorrect. It is also believed that one man should be left to hold the horses. To tie the horses and leave them unguarded might result in the patrol losing its mounts. A mounted man might well be sent to the top of Sentinel Hill. From there he can see a long distance, can early observe the approach of any hostile force and can then promptly join the rest of the patrol near the bridge.

LEROY ELTINGE,

Captain 15th Cavalry.

ROGER S. FITCH,

Captain 2d Cavalry.

Committee

In accordance with the above report, the prize for the best solution of Non-commissioned Officers' Problem No. 2, is awarded to First Sergeant A. W. Booraem, Troop 3, Squadron "A," N. G., N. Y.

The other four solutions noted as being among the best were submitted by members of the same troop as follows:

"Raffles"-Lance Corporal Prentice Strong.

"Smith" - Corporal Howard Payne.

"Komaster"-Sergeant Stanton Whitney.

"English" - Lance Corporal Walter C. McClure.

EDITOR.

SOLUTION.

I. One one-half pounds of dynamite will cut a plate one foot wide by three-fourths inch thick. Girder would probably not be as large as that. I would, therefore, need one and one-half pounds or six sticks of eight ounces each.

I would equip each trooper and myself with six sticks and detonators. Sticks to be carried in saddle bags, well wrapped in underwear and towels. Detonators to be carried on person. Both sticks and detonators on off side to give maximum shelter in case of firing. Each man is then equipped sufficiently to destroy bridge at least in part.

II. I would follow the roads mentioned in following formation: Myself and one trooper in the lead on opposite sides of the road, one trooper about 25 yards in rear, the other two, a couple of hundred yards still further back. I would take leading unit to avoid necessity of signals as far as possible. I would keep the odd man near in case of necessity for sending up side roads, etc. The rear pair as far to rear as conformation of road and land permit, about 200 or 300 yards to insure their escape if necessary.

It is not my mission to discover the enemy, its patrols, etc. Therefore I would proceed as rapidly as possible along roads indicated, observing so much of country as was in sight for purpose of avoiding enemy and preventing interference with mission.

III. On discovering patrol I would endeavor to avoid it. It is not my mission either to report or to resist them unless there is no alternative and my original mission has failed.

I should avoid them by turning to the right (North) and making detour as far as Curran's. Atchison's Hill on left would probably be occupied by one of their patrol for observation.

In making detour I should proceed well to north so that if discovered enemy would be lead to believe I was making for Wagner's Point. Passing Curran's I should proceed across country parallel to the road so as to have alternative if going South or North of Sentinel Hill according to de-

velopments and proceed as rapidly as possible, consistent with safety and observation.

- (b) I intend to carry out original order unless prevented by superior force. I would not report discovery of patrol as presence of enemy generally is known to commander and I cannot afford to take man from my patrol.
- IV. (a) On arriving at bridge dispositions would depend on circumstances. I would leave horses at nearest convenient tree until ready to fire charges when I would withdraw them to safe distance. If pressed for time I would use all the men at the bridge. If not, I would leave one man with horses as a general lookout.

In case of opposition I would place four men in most advantageous positions according to position of enemy and would meet opposition by making a stand, developing enemy's force as far as possible and then go in person, probably by river bed to avoid discovery to bridge to fix and fire charges.

There is nothing to be gained by putting a man up each road to report an advance as their time and labor at bridge is worth more than such service.

(b) One one-half pounds dynamite would cut any one girder. This means six sticks would probably do the work. I would fasten five sticks in the angle at the center of the upper and six on the center of the lower chords on each side of the bridge; if time permitted fastening them around girder or if not, just tying them on top of lower chord and underneath upper chord. If still undisturbed, I would fire these charges and observe results and prepare second charge if necessary.

If greatly pressed for time and working alone, I would take saddle bags and fill them full of dynamite with detonators and fasten to center of lower chord, if possible. If not, then just inside angle at end of bridge.

V. There would be no necessity for sending a message unless circumstances arose which made it advisable to remain in observation after destroying bridge instead of reporting in person. In this event I would send message by two men.

FRENCHMAN'S, 3 June, 10.
10:30 A. M. No. 1.

FROM FRENCHMAN'S PATROL.

To Commanding Officer Independent Cavalry:

Pursuant to instructions I have destroyed bridge at Frenchman's.

At 9:30 A. M. I discovered and avoided enemy's patrol of five men at E. F. No further evidences of enemy as yet. Will remain in observation at Sentinel Hill until dark, unless recalled, and endeavor to interrupt and destroy patrol referred to. Am sending report by two men. Have (or have not) heard detonations in vicinity of Millwood bridge.

PENDLETON, Sergeant.

Respectfully submitted,

"PENDLETON."

NON-COMMISSIONED OFFICERS' PROBLEM NO. 3.

SITUATION.

A large mixed force, of which your troop is a part, has arrived in Kickapoo from the north and has halted there. Your troop has been ordered to reconnoiter for the enemy who is reported as advancing toward Leavenworth from the south.

Your troop has arrived at West End Parade in Fort Leavenworth and your troop commander there gives you the following verbal orders:

"I have heard nothing more about the enemy. The troop is now going to PRISON HILL. You will move out quickly at once with the leading three sets of fours as advance guard marching via PRISON LANE."

REQUIRED.

- 1. Write out the verbal order you would give to your advance guard.
- 2. Presuming that the main body of the troop moved out at a walk at the same time that you began the deployment of your advance guard.

- (a) Give the location and strength of the various elements of your advance guard when its point has reached the spur just north of U. S. Pen.
 - (b) Indicate your own position.
- (c) About where will the head of the main body of the troop be at this time?
- 3. When you reach the crest of Long Ridge you can see marching on the road from Ninth Street and Metropolitan Avenue toward the U.S. Pen a force of dismounted men in several bodies, increasing in size from front to rear. You judge you can see 100 men and dust is rising on Metropolitan Avenue back of these.
- (a) What are your conclusions as to what you have seen?
 - (b) What do you do now?
- (c) If you should send a message to your troop commander, what is the message and would you write it out or send it verbally by a messenger?
- (4) You look back from Long Ridge and see your troop turn westward. In a minute or two a messenger arrives with instructions to you from your troop commander as follows:

"The troop marches via 12 and Atchison Cross. I will send out a new advance guard. You with your detachment will follow the troop as a flank and rear guard."

- (a) How do you intend to carry out this order?
- (b) What instructions do you send to the men in your point and to those out as flankers on your left?
- 5. As the troop approaches 12, you see that it takes the gallop, turns due west up the ravine and disappears in the woods. When you arrive at 12 you are fired upon by what you take to be about eight or ten dismounted men from the direction of the railroad cuts south of 12.

What do you do now?



Military Topography.* This book was written for use as a text book in the Department of Edgineering, Army Service School, and contains all that

the average line officer requires to know of the subject. It is divided into three parts, viz: Military Map Reading, Military Topographic Surveying and Military Sketching.

The first part is a revision of the author's book on map reading, 8,000 copies of which were issued to the Organized Militia by the Militia Division of the War Department. This book has filled a long felt want and has been enthusiastically received by officers of the regular army and militia. It is very complete and yet so simply written that it has been used with great success in the instruction of officers and non-commissioned officers.

The second part on surveying treats of just the matter that a line officer should know, and embodies the experience of the Department of Engineering in the instruction of line

^{*&}quot;MILITARY TOPOGRAPHY FOR THE MOBILE LAND FORCES." by Captain C. O. Sherrill, Corps of Engineers, U. S. A., Instructor, Department of Engineering, Army Service Schools, Fort Leavenworth, Kansas. Three hundred and fifty pages 53/8 x 83/8, 170 figures and one map 18 x 24 inches, bound in cloth. Published by the author and supplied to officers of the army by the Secretary of the Army Service Schools, Fort Leavenworth, Kansas, General agents: The U. S. Cavalry Association, Fort Leavenworth, Kansas, and the U. S. Infantry Association, Washington, D. C. Price, \$2.50.

officers at the Service Schools for the past four years. Special attention is devoted to plane table work, which has been found to be the best method of making accurate military topographic surveys and to be an excellent preparation for the use of the hand plane table, which is used in making rapid military sketches.

The use, adjustments and care of the transit and level are explained and each instrument is clearly illustrated with the names of all the parts tabulated and shown on the figures.

One chapter is devoted to the instruments used in finishing maps, and the methods of using them. Another chapter treats of the reproduction of maps by mechanical and photographic methods.

The third part on sketching was used this year at the Service School in pamphlet form and proved to be an excellent text book on the subject. It is the only book on sketching by which an officer can learn to make rapid sketches without the aid of an instructor. It embodies the results of the experience of line officers at the Service Schools for the last four years, during which time there has been a marked improvement in the quality and rapidity with which the sketches have been made. This part of the book is especially adapted for instruction in the use of the new sketching case issued by the Engineer Department, and used for the past two years at the Service Schools.

Chapter I, of the part on Sketching treats of sketches, scales, measurements made in sketching, estimation of distances. Chapter II contains the method of measuring horizontal distances, instruments used in position and outpost sketching, estimation of slopes, estimation of differences of elevation, what military sketches should show, classification of sketches. Chapter III gives the methods of sketching, horizontal location of points, methods of contouring, execution of a position sketch, methods of work, contouring the sketch, points to be observed in sketching, execution of outpost sketches. Chapter IV contains the following: Execution of a road sketch, methods of work dismounted, location of horizontal details, contouring the road sketch, road sketching mounted, execution of place sketches, exercises in

sketching. Chapter V treats of topographical reconnaissance reports; road and river reconnaissance; reconnaissance of railroads, woods or forests, mountains, camps, positions.

In an appendix are tables for the reduction of stadia measurements; natural sines and cosines, and common logarithms, with explanations of their use.

All mathematical demonstrations are limited to the actual necessities of the case, and where possible, figures are used to illustrate problems.

The book is well illustrated by over 150 figures and plates; it is logically arranged, the paragraphs are numbered and there is a good index; the type is large and clear, and the binding heavy and durable.

J. A. W.

A Course in Spanish.*

As set forth in the preface, the text is intended for a course of instruction in conventional Spanish. It has been written

as a text book for use in the Army Service Schools, where the period devoted to the study of languages; is unfortunately but necessarily, limited, and where the fundamentals are the first consideration, but the student who has mastered this text has gained a working knowledge of the language, and a foundation from which he can make (if he should desire) a more extensive research into the refinements of Spanish grammar and literature.

The scheme of the work is not essentially different from that of other methods of instruction, but its prime object of giving a useful vocabulary in dealing with subjects which present themselves in daily life is consistently pursued throughout. Beginning with orthography, pronunciation and syllabification, the article, the noun, with the simplest sentences, the student is taken progressively in the forty-six chapters through the use of the tenses and modes, the passive voice and its reflective substitutes, the distinctions be-

^{* &}quot;A Course in Spanish." Prepared by the Department of Languages, Army Service Schools. Army Service Schools Press.

tween "Ser" and "Estar," the use of the pronouns and possessive adjectives, the distinctions between "por" and "para," etc., and the essential grammatical rules are explained and exercises given therein. Each exercise is preceded by a vocabulary containing words to be employed. These exercises in the latter part of the text deal with single general subject, as the Army, Navy, Railways, Stores, Hotels, etc., but with sentences so varied as to meet the requirements of expression. These exercises are in two halves, Spanish and English. The English part is the exercise proper. The Spanish to be used mainly to accustom the ear to Spanish sounds.

Every fifth chapter, after the simplest rules are explained is a review of the exercises given in the four preceding ones.

The fundamental rules given in the beginning are elaborated in the latter part of the text, and the repetition necessary for fixing the grammatical rules in the memory of the student is obtained.

An appendix contains the conjugations of verbs in the various classes with references to the paragraphs in the text in which the irregular verbs are actually used in the exercises.

An excellent index of fourteen pages adds greatly to the value of the text, making reference to any troublesome point easy.

The work is well thought out, the sentences generally natural, always rational, and the text as a whole gives the impression of being a very useful and practical scheme for the attainment of a speaking acquaintance with the Spanish language.

While written primarily for use as a text book in the Army Service Schools, it will prove useful to those who are endeavoring, without the aid of an instructor, to gain a working knowledge of Spanish.

As to its value to an officer who contemplates taking the course in the Army Service Schools, the text speaks for itself.

Machine Gun
Tactics.*
This is a book of 260 pages, printed in large type and well bound. So little study has been given to Machine Gun

Tactics by our service in general that such a book as this one ought to prove an eye opener to the possibilities of this relatively new arm. The author quotes freely from accounts of the late Russo-Japanese War, where machine guns, according to many of the observers played a very important role to sustain the principles he enunciates. Reports of American observers and articles that have appeared in the Cavalry Journal are referred to and give an added interest to this book for the American officer. To those who are entrusted with developing the proper tactical use of machine guns in our service, this book is commended. No officer alive to his profession will regard its cost otherwise than money well spent.

The following table of contents gives an idea of its scope; it will be noted that two full chapters are devoted to the use of this weapon with the cavalry:

TABLE OF CONTENTS:

Chapter I. Description and Organization.

Chapter II. General Principles.

Chapter III. With Independent Cavalry. Chapter IV. With Protective Cavalry.

Chapter V. Employment with Infantry.

Chapter VI. Employment with Infantry. (Continued.)

Chapter VII. In Fortress Warfare. Chapter VIII. In Minor Operations.

Chapter IX. Machine Guns of Different Countries.

^{*&}quot;MACHINE GUN TACTICS," by Captain R. V. K. Applin, D. S. O. Hugh Rees, London, 1910. Price six shillings, net.

Cavalry in War A new book by General Frederick von and Peace.* Bernhardi on the rôle, tactics, training and organization of cavalry, has just appeared in the German. An authorized English Translation has been made and is now being published by Hugh Rees, Ltd., and the U. S. Cavalry Association.

An extended critical review of this work will appear in the September number of the CAVALRY JOURNAL.

The following are extracts from a review of the book which was prepared by the British General Staff:

"In this important work General v. Bernhardi examines and develops his previously expressed views on modern cavalry by the light of history and of the recently published German "Cavalry Drill Regulations."

"In introducing his subject the author agrees in a measure with those who hold that, of all the arms, cavalry has suffered most in value through the improvement in modern weapons, but he maintains that, in certain directions, its sphere of usefulness has extended and requires to be dealt with by new methods.

"Speaking generally, he holds that the great decisive cavalry charge is a thing of the past though still a possibility, and bears out his contention by reference to history and by close reasoning. At the same time he shows how easily such attacks may be warded off and how in future it will be necessary to pave the way for them with fire action and thus introduce a mixed element into the fight.

"The services of exploration, of screening and of raids have, he says, become by far the most important duties of modern cavalry.

"This book is divided under three main headings, the rôle of cavalry, peace training and organization, The first of these occupies two-thirds of the book and deals with almost every phase of cavalry duties in war.

^{*&}quot;CAVALRY IN WAR AND PEACE." A critical survey of the role, Tactics, Training and Organization of Cavalry," by General Frederick von Bernhardi. Authorized translation by Major G. T. M. Bridges, D. S. O., Fourth (Royal Irish) Dragoon Guards. Hugh Rees, Ltd. London, and The U. S. Cavalry Association, Fort Leavenworth, Kansas.

"He can find no light in history from the time of Frederick the Great and Napoleon right up to the latest examples in Manchuria, as to the proper conduct of cavalry in a future war, but thinks of all campaigns the American Civil War can most profitably be studied by cavalry officers.

"He deals first with the service of reconnaissance from the point of view of the army cavalry down to that of the small patrol. This is followed by a chapter on screens which the author classes as offensive and defensive. The former is only used by an advancing army and where a defensive screen cannot be formed. It consists of patrols pushed up all roads leading to the front supported by stronger bodies of cavalry, cyclists and where necessary the other arms. The defensive screen consists of patrols holding the approaches in chosen localities (especially woods) and supported by formed bodies ready to attack the enemy should he break through. The author remarks that the divisional cavalry will have to be supplemented for these duties.

"The author then turns to the subject of raids with which he deals at considerable length, finding himself in disagreement with the 'Cavalry Drill' which lays down that they should only be undertaken when there is a superfluity of cavalry and must not deter troops from playing their part in a general engagement. The author holds that on account of the sensitiveness of the modern army's communications such enterprises have increased in importance as the value of cavalry on the main battlefield has diminished. He thinks that under modern conditions a cavalry division would exercise more influence on the decision of a great battle by riding round the enemy's army, as did General Stuart at Gettysburg, than by being present at the decisive point. He examines the conditions necessary for success in such undertakings and thinks the German cavalry division of six regiments too weak to undertake them. He therefore advocates augmentation of strength and the addition of cyclists battalions.

"In dealing with dismounted action, the author criticises the 'Cavalry Drill' for laying down that attacks on foot must be brought to a conclusion with the utmost rapidity and only undertaken when superiority is assured to the attacker. This does not allow for the grave situations where the army cavalry may be obliged by the strategical situation to attack some locality, cost what it may, without any such overwhelming superiority. Cavalry, like the other arms, should be prepared to fight on to the last man when the occasion demands, as did the Japanese cavalry brigades at Sandepu. He disagrees with those who advocate the substitution of a bayonet for the sword, holding that the sword has its use and its loss would tend to lower a cavalryman's self-confidence.

"The second part of the book deals with peace training looked at from the practical point of view of preparation for war. A series of short chapters deals with the individual training of man and horse on a progressive system, the result of experience. Stress is laid on the desirability of a longer individual training for the remount and a more constant flow of young horses into the ranks.

"Value is attached to the simultaneous training of the man in musketry and riding so as to save more time for war training, while stress is laid on the necessity for developing his self-reliance.

"Field training, thinks the author, should conclude not only with maneuvers but with a great reconnaissance. He discusses this and offers numerous practical hints which would be of service to leaders at maneuvers.

"He then deals with the battle training for formations of all strengths. The practical in war is his watchword, and from this point of view the various considerations as to the battle of encounter and the proper value of fire action are discussed.

"In conclusion, the author deals shortly with the German cavalry organization, holding that for war, brigades of three regiments, strong cavalry divisions properly supplied with everything necessary to their independence and the creation of cyclist battalions are necessary to give the army cavalry its proper offensive value. He asks for more scope for the Inspector-General of cavalry in the performance of his duties.

"The book is replete with useful matter for cavalry officers and others interested in the subject, and crystalizes much abstract and vague teaching into sound argument and clear language. It has an excellent index."

As the title indicates this book is a glossStrategy.*

As the title indicates this book is a glossary of the subject of strategy. A student
about to take an examination in strategy
would find the book of great benefit as a general review just
prior to the examination. A condition precedent to gaining
any benefit from the study of this work is a thorough knowledge of military history and a previous course in strategy.
Considering that our army does not have much to do with
"speck" examinations, and also the general condition of
military education as it now exists with us, it is not believed
that this work will be found of value by many of our officers.

The book is well printed in large type, handsome in appearance and is accompanied by fifteen maps or charts that make clear the meaning of the reference in the text to various battles or campaigns.

E.

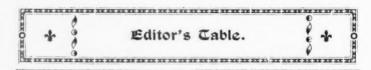
Campaign of which will be issued in the early fall.

Chancellorsville.† In this number of the CAVALRY JOURNAL is reprinted a part of Chapter VIII of this book under the title of "The Battle of Kelly's Eord."

Those of our readers who know Major Bigelow are aware that he is a careful, painstaking writer, and it is believed that this forthcoming book will be a welcome addition to the literature on the subject of the campaigns of the Civil War. A review of this work will appear in the September number of the CAVALRY JOURNAL.

[&]quot;A Précis of Strategy," by Brevet Lieutenant Colonel W. D. Bird. D. S. O. Hugh Rees, Ltd. London. Price 3 shillings and 6 pence.

^{†&}quot;THE CAMPAIGN OF CHANCELLORSVILLE,' by Major John Bigelow, Jr. The DeVinne Press, New York.



BREEDING CAVALRY HORSES.

As many of our readers may know, some time since the Quartermaster's Department and the Department of Agriculture entered into a scheme for the purpose of encouraging the breeding of suitable horses for the mounted services of the army, particularly suitable horses for the cavalry service. The Department of Agriculture has long been willing to institute a general scheme with this end in view, but it was only within the last few months, since the establishment of the remount depots, that the Quartermaster's Department was able to coöperate by agreeing to purchase the colts that should be bred under this scheme.

The Department of Agriculture is about to, or has already instituted two or more experimental horse breeding stations in certain districts for the express purpose of interesting breeders in raising horses suitable for the cavalry service.

Also very many of the horse shows throughout the country are now having a "Charger" class which will also have a tendency to improve the breed of horses that we need for the cavalry service.

Both of these ideas should be encouraged to the fullest extent by our mounted services. Although these beginnings may not bear immediate fruit, yet the work is in the right direction and may ultimately result in our being able to procure suitable mounts for the officers and troopers.

Recently, at the suggestion of Captain C. H. Conrad, Third Cavalry, who is now on duty in the Quartermater's Department and engaged and purchasing young horses for the remount depots, the Executive Council of the Cavalry Association determined to offer a cup for the horse exhibited in the Virginia Horse Show Association winning the largest number of blue ribbons as a charger.

Regarding this proposition Captain Conrad wrote:

"The spring shows commence next month, and if this step is to be taken the present year, it is essential that all the preliminaries be arranged at once.

"As I wrote you before, I am in a position to have this matter taken up by the Virginia Horse Show Association and can assure you that all of the shows will make a feature of this class and devote a page in all catalogues to a description of the horses considered proper for entrance in this class, as well as the general advertisement of the cup and reasons for its existence.

"Owing to the fact that a number of officers of infantry are now required to be mounted, it is possible that some support of this movement could be obtained from the Infantry Association. I have not approached them on this subject, as it seems to me that the cavalry should be not only willing, but anxious to do this by themselves. Later it might be advisable to have all branches of the service help this movement and designate the cup as an army cup. This of course, would increase the interest and stimulate the competition in the charger class. The horses of this class are, of course, exactly what we want for officers' mounts as well as for the troopers. While the civilians interested in horses and horse shows have manifested themselves in this way, and the two departments are doing everything in their power

to improve the mounts of the army, it seems rather negligent for the branch of the service most effected to do nothing.

"I, therefore, write to urge upon you the advisability of looking into this matter at once and if possible have the necessary money set aside for the purchase of a suitable cup.

"I suggest the giving of this cup in Virginia because of the fact that at present the class of horse that we want, and the breeding we are anxious to stimulate are found princicipally in Virginia, also because the horse shows are better organized in Virginia than elsewhere.

"As you know, the cavalry has been used to the heavy and draft type of mounts for so long that its eyes have become set upon a rather beefy, low bred but substantial looking horse. Many officers are inclined to think that the finer bred horse; the horse with better lines, has neither the power nor endurance of the horse to which we are accustomed. Many do not realize that a finely turned horse is heavier and stronger than he appears.

"If my suggestion is followed and photographs of the blue ribbon winners in the various shows are published in the CAVALRY JOURNAL, nearly every edition could show a photograph of an animal considered by experts as one of the best chargers. It seems to me that the educational side of this would far outweigh any expenditure that might be made in this direction for this trophy. Later also this cup should be open to competition in any show in the country."

Since the cup has been offered the following has been received from Captain Conrad:

"I am enclosing a copy of the page in the horse show catalogue on the Charger Class, recently issued as a result of the offer of a cup by the Cavalry Association.

"The judges score card will have the following headings and their marks will be in per cent: Catalogue number, name of horse, sex, color, etc., name of exhibitor, breeder, age, height, head, neck, withers, shoulders, chest, fore legs, knees, back, loins, barrel, hind quarters, tail, hocks, limbs, pasterns, feet, general appearance, average per cent. and award."

"CHARGER CLASS."

"In order to stimulate the raising of horses for the army, as well as to acquaint horse breeders with the type and kind of horse best suited for army purposes. The Cavalry Association U. S. Army has decided to donate yearly an handsome solid silver cup to the horse exhibited in the Virginia Horse Show Association Circuit, winning the largest number of blue ribbons as a charger.

"GENERAL DESCRIPTION OF CHARGER."

"Mare or gelding, shown to halter, conformation only to count; breeding, at least fifty per cent. thorough-bred; age three or four years; color, any but gray or white; height, measurements to indicate a 15½ to 16 hand horse when mature."

"(Note.—Score eard of judges will be conspicuously posted on bulletin board, after awards in class, showing standing of horses, in points, on detail of conformation. Owner of each blue ribbon winner to furnish photograph and breeding of horse for publication in "Journal of the U. S. Cavalry Association." A copy of the Journal will be sent owner of each blue ribbon horse.)"

THE BATTLE OF GETTYSBURG.

Under the above title, there appeared in the September and November, 1909, numbers of the CAVALRY JOURNAL a reprint of an account of that great battle written July 16, 1863, by First Lieutenant Frank A. Haskell, Sixth Wisconsin Infantry, at that time an aide on the staff of General Gibbon, and who was killed at Cold Harbor while colonel of the Thirty-sixth Wisconsin.

As was stated in a foot note to that article, the pamphlet was furnished the Editor by Major General Wiley, N. G., Pa,, and that it appeared to be a reprint from some college magzine.

As has been noted before, no one article that has appeared in the CAVALRY JOURNAL for years, if ever, has at

tracted more universal attention and comment as did the reprint of this one. It was highly commended by many of our readers and spoken of as "a graphic description," "a classic," etc.

Recently, however, there has appeared a small book of forty-two pages, published by "The Philadelphia Brigade Association," and which is a scathing attack upon Haskell and his account of the battle. From this book we learn that this account was first printed for private distribution by Haskell's brother about the year 1878. It was reprinted in 1898 as a part of the History of the Class of 1854, Dartmouth College, but with certain omissions that severely reflected upon the Eleventh Corps, General Sickles and President Lincoln. It was again republished in 1908 by the Loyal Legion of Massachusetts and again in December, 1908 by the History Commission of Wisconsin.

It was a copy of the 1898 edition, the expurgated edition, that fell into our hands and was reprinted in the above mentioned numbers of the CAVALRY JOURNAL.

The cause of the appearance of this book will appear from the following extract from the introductory part of it:

"At the stated meeting of the survivors of the Philadelphia Brigade, held in that city on September 7, 1909, letters were read from General Alexander S. Webb, who commanded the Philadelphia Brigade at the Battle of Gettysburg, requesting the consideration of the Brigade Association to the most astounding misstatements made by First Lieutenant Frank A. Haskell, Sixth Wisconsin Infantry, in a paper said to have been written by him under date of July 16, 1863, two weeks after the Battle of Gettysburg had been fought and addressed to his brother."

The reading of this letter and the accompanying copy of Haskell's account led to the unanimous adoption of the following preamble and resolution.

"Whereas, In the 'Narrative of the Battle of Gettysburg,' by Lieutenant Frank A. Haskell, Sixth Wisconsin Infantry, and an aide on the staff of General John Gibbon, said to have been written a few days after the battle and reprinted in 1898 as a part of the History of the Class of 1854, Dart-

mouth College, and republished in 1908 under the auspices of the Massachusetts Commandery of the Military Order of the Loyal Legion of the United States, the Philadelphia Brigade has been recklessly, and shamelessly, and grossly misrepresented; therefore, with a view of correcting these wilfull misstatements, it is

"Resolved, That a committee consisting of the officers of the Philadelphia Brigade Association, together with two comrades from each of the four regiments of the brigade, be appointed to carefully consider the matter, and, if deemed advisable by the committee, to publicly enter its protest against the malicious statements 'reprinted in 1898 as a part of the History of the Class of 1854 of Dartmouth College,' and again republished by the Loyal Legion of Massachusetts in 1908, with a degree of recklessness and disregard for truth unparalleled in any publication relating to the Civil War; statements so false and malevolent as to be wholly unworthy of a class of Dartmouth College, or of a Commandery of the Loyal Legion of the United States, etc."

The book in question is the product of the labors of the above mentioned committee.

It will be observed that no mention is made in the above preamble and resolution of this account having been repubpublished by the Wisconsin History Commission, and it is presumed that, at that time, they did not know that it had been so republished by them. However, in the report of the committee due attention is paid to the fact and this Commission, together with the Loyal Legion of Massachusetts and the prior publishers of this article are severely scored.

While it is impossible for us to give this defense of the Philadelphia Brigade Association in full, yet, inasmuch as this account has appeared in the CAVALRY JOURNAL also, it is felt that, in justice to them, the book should be noticed and such extracts made as will give their side of the question.

Their principal cause for complaint is given in the following extracts: "The charge of cowardice on the part of the Philadelphia Brigade, purported to have been made by Lieutenant Haskell is printed on pages 60, 61 and 62 of the volume published by the Loyal Legion of Massachusetts, and is in part as follows:

The part quoted is that appearing in the November, 1909, number of the CAVALRY JOURNAL, commencing with line fifteen on page 437 and down to include line twenty, page 438. In brief, this is to the effect that being unable to find General Gibbon, after having delivered a message to General Meade, he rode to the right of the second division; he being the only mounted officer then near the engaged lines-"as the most eligible position to watch the further progress of the battle." He then says: "I had come near my destination, when Great Heavens! were my senses mad?—the larger portion of Webb's Brigade-my God, it was true-there by the group of trees and the angles of the wall, was breaking from the cover of works, and without order or reason, with no hand uplifted to check them, was falling back, a fear-stricken flock of confusion. The fate of Gettsyburg hung upon a spider's single thread." He then proceeds to tell how he "ordered those men to 'halt' and 'face about' and 'fire' and they heard my voice and gathered my meaning and obeyed my commands. On some unpatriotic backs of those not quick of comprehension, the flat of my saber fell, not lightly, and at its touch, their love of country returned, and with a look at me as if I were the destroying angel, they again faced the enemy. General Webb soon came to my assistance. He was on foot, but he was active and did all that one could to repair the breach or to avert the calamity."

The report of this committee then goes on to say:

"Colonels O'Kane and Tschudy of the Sixty ninth were killed in action; Baxter of the Seventy-second, wounded and carried off the field; Moorehead and his one hundred and sixth regiment had been sent by Gibbon to the support of Howard's Corps, thereby materially weakening the brigade; Colonel R. Penn Smith, of the Seventy first, and Lieutenant Colonel Theo. Hesser, of the Seventy second, were with their commands, which they never left, encouraging their men to even greater deeds of heroism; Webb is still living and in a supplemental paper to this reply will state specifically where

the commander of the brigade and his adjutnant were and what they did.

"While Haskell has long been dead—killed in action at Cold Harbor in 1864, and it seems cruel to speak harshly of the dead, yet duty to the living, and to the honored dead of the Philadelphia Brigade compels reply. The unreliability of Lieutenant Haskell as a writer of military matters was equalled only by the egotism of the youthful lieutenant."

Several other quotations from Haskell's account are made, each preceded by some such comment as "the Haskell slander," "the egotism and recklessness of Haskell," "this silly statement," "Haskell might, with equal truth and egotism," "this absured statement," "the colossal vanity of Haskell," etc., but none of these refer to the Philadelphia Brigade and are evidently given with the view of showing that Haskell was inaccurate in other respects as well.

Following these extracts and the comments upon them is the following from General Henry S. Huidekoper, who commanded the 150th Pennsylvania at the Battle of Gettysburg after its colonel was wounded and carried from the field.

"In the first print much of what Haskell said was suppressed and we can not but regret that any of it was made public, for, from a historical standpoint the story is inaccurate and misleading, and from an ethical standpoint it is indecent, venomous, scandulous and vainglorious."

Then follows these extracts from the reply:

"And this is the 'narrative' that the Military Order of the Loyal Legion of Massachusetts and the History Commission of Wisconsin have recently published in attractive and costly form, given the same wide circulation, unmindful of the fact that thereby they are inflicting irreparable injury to both the living and the heroic dead."

"As to the charge of cowardice against a brigade that lost 3.533 in killed, wounded, deaths from other causes, and missing, made under the auspices of Dartmouth College, and the Military Order of the Loyal Legion of Massachusetts, is so positive, so indecent, so scandulous, so brutal and so absolutely false, the Philadelphia Brigade in formulating a reply to these malicious and infamous violations of facts, has

deemed it proper to submit, as briefly as possible, extracts from Colonel Bane's 'History of the Philadelphia Brigade,' about what the Old Brigade did from the time it received the order to move from Falmouth, Virginia, until it met and turned back the charge of Pickett's division at the 'Bloody Angel' of Gettysburg on the afternoon of July 3, 1863."

Then follows extracts from Bane's History, comments on on the same, various notes and letters as well as tables of losses, all going to show the part taken in the battle by this

brigade.

Without going into the merits of the case, it is noted that a large portion of this book is given up to confuting other charges made by Haskell, rather than the one in question and in applying opprobious terms to the writer.

As to the charge that the Haskell account is "Vainglorious," it is true but the same may be said, to a certain extent of all, with a very few notable exceptions, personal accounts, histories of regiments and brigades, North and South, of the Civil War.

As one well known student of the History of the Civil War said not long since, "It is a God send to the military student that there were no typewriters in those days" and many others have said that the history of the Civil War is yet to be written. There is such a mass of vainglorious chaff to be sifted out before the wheat is found in the large majority of personal accounts of the parts taken by individuals, regiments, etc., in that war that they are almost valueless from a historical standpoint.

In conclusion the following extracts from official reports, etc., regarding the part taken by Haskell in the battle, are given:

"From General Hancock's report: "I desire particularly to refer to the services of a gallant young officer, First Lieutenant F. A. Haskell, aide-de-camp to Brigadier General Gibbon, who, at a critical period of the battle, when the contending forces were but fifty or sixty yards apart, believing that an example was necessary, and ready to sacrifice his life, rode between the contending lines with a view of giving encouragement to our and leading it forward, he being at

the moment the only mounted officer in a similar position. He was slightly wounded and his horse was shot in several places."

Of him General Gibbon wrote: "There was a young man on my staff who had been in every battle with me and who did more than any other one man to repulse Pickett's assault at Gettysburg and he did the part of a general there."

Colonel Norman J. Hall, of the Seventh Michigan Infantry, commanding the Third Brigade, thus refers to the same incidents; "I can not omit speaking in the highest terms of the magnificent conduct of Lieutenant Haskell, of General Gibbon's staff, in bringing forward regiments and in nerving troops to their work by word and fearless example."

From these and other similar reports, it would appear that Haskell certainly had a magnificent record for gallantry.

U. S. FIELD ARTILLERY ASSOCIATION.

As has been noted elsewhere in this number of the JOURNAL, the officers of Field Artillery, regular and of the National Guard, have organized an association along similar to those of the other service organizations. In their association, however, they have adopted an idea that is a marked exception to those of the associations of the other branches of the service, in that they have admitted the Field Artillery officers of the National Guard to full regular membership.

Inasmuch as the National Guard, under its present organization and the laws as to their service, is to become part of the mobile army in time of war, and particularly since the advancement in instruction of its officers and the enthusiasm with which a large majority of them are perfecting themselves in their duties, it is believed by many that this is a step in the right direction.

At one time it appeared that we of the cavalry were going to have the pleasure of having Field Artillery officers affiliate with us and come in as a branch of the Cavalry Association or that both would unite in forming a mounted service association. While this, in many respects, would have been best for them as well as for us, yet for many good reasons that appealed to them, they deemed it advisable to form a separate organization.

In fact there are many good reasons that have been advanced why all branches of the service, particularly all branches of the mobile army should unite in forming one grand association and publish one journal for their mutual benefit and advancement, but more especially to foster that cooperation that is necessary in a well trained army.

The U. S. Cavalry Association welcomes this new Association into the brotherhood of service institutions and wishes for it every possible success.

ARMY BALLADS.

Harvard University has appointed Professor John A. Lomax, College Station, Texas, "Sheldon Fellow for the Investigation of American Ballads."

Professor Lomax asks that our readers send in copies of old army songs or any relating to the military life of the soldier.

This is a matter of importance in the interest of American literature, American history and American folk-lore and it is hoped that our officers will help in this work of collecting and preserving the many old time army songs that are now heard no more.

There are many such that were quite familiar in the army a generation ago that possibly some of our older officers, especially those on the retired list, may have copies of and which in this manner, may be saved from utter oblivion. There was one old song that was heard about the camp-fires some thirty years ago that was about, or referred to "Aransas Bay" that is now never heard, and it is possible

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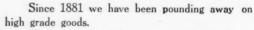


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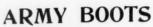
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that in another generation even the "Wild Missouri" will be a thing of the past.

The Editor of the CAVALRY JOURNAL will be pleased to receive and forward copies of such songs as may be in the possession of our members.

THE CAVALRY EQUIPMENT BOARD.

As our readers are aware, a Cavalry Equipment Board has been convened to meet at the Rock Island Aresenal for the purpose of considering the question of changes in cavalry equipments, horse and personal, the refle and pistol excepted.

This board has been authorized to correspond direct with all cavalry officers regarding suggested improvements in cavalry equipments and its President has made a general call for such suggestions.

This is an important Board and the result of its labors will be of great interest to our branch of the service, as no such Board has been convened for over a quarter of a century.

The most important questions for the consideration of this Board are those of changes in the curb bridle, the saddle, the carrying of the rifle, and the total weight of the equipment to be carried on the horse.

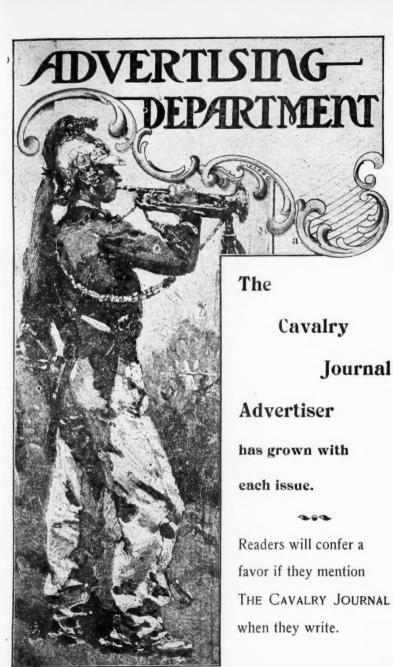
It is hoped that the question of an automatic rifle or car bine will be so far settled before this Board concludes its work that this may also be referred to it, in order that the question of the rifle vs. a carbine may be discussed and settled.

In the minds of many officers there is no doubt that the weight carried by the horse should be reduced and that not only should some of our equipments be dispensed with for this purpose and that a carbine should be adapted to replace the cumbersome and weighty rifle.

While the McClellan saddle has stood the test of time and experience in many respects, and is undoubtedly the best saddle that our service has ever had, yet there is also room for improvement in it. However, care should be taken in making these that its quality of standing the rough usage of field service should not be sacrificed.

It is hoped that our progressive cavalry officers will take an active interest in the work of this Board and assist it by sending in sound practical suggestions on the above and the various other questions that will undoubtedly come before it.





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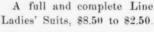
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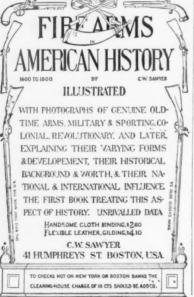
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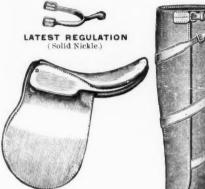
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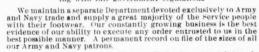
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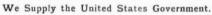
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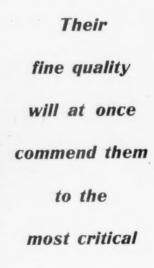




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